THE

FARMER'S MAGAZINE:

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(No. XII.)

BRANCH I.

PART I.

ORIGINAL COMMUNICATIONS.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Corn Trade and Corn Laws of Great Britain.

GENTLEMEN,

I OBSERVE, in your laſt Number, a valuable paper from the Rev. Mr Skene Keith, on the Corn Trade and Corn Laws of Great Britain; and, though I may differ from that gentleman in a few particulars, yet, in the main, I cordially agree with him.

I entirely coincide with him reſpecting the propriety of having one general average to regulate exportation and importation throughout the kingdom; although I am perſuaded, that it is a meaſure that will neither pleaſe the exporter of the Eaſt, nor the importers of the Weſt; a circumſtance, which perhaps may be thought no bad criterion of its being a proper one.

According to an ineſtimable work, (Smith's Corn Tracts), 'the errors of the late Corn Laws have been occaſioned, by endeavouring to ſuit the accidental circumſtances of every place; whereas, all laws, made for the whole kingdom, ought to be conſidered in a more enlarged view.' Having one general average, will put an end to that incongruity of giving a bounty on exportation on the Eaſt ſide of the iſland, whilſt a great importation is going on in the Weſt.

The Corn laws were pretty ſtable until the year 1767. Since that time, many temporary ones have been enacted; which have been of ſo little avail, that one might be inclined to think, that theſe acts

——were intended
For nothing elſe but to be mended. HUDIBRAS.

Among the numerous ones that have been paſſed, it is ſomewhat extraordinary that no one ever thought of conſidering our internal demand as the moſt eligible, as well as the moſt permanent market.

In my opinion, Mr S. Keith's Tables take in too large a ſpace of time. It is ſcarcely poſſible that the concluſions which may be drawn from calculations formed from the prices, &c. of a great extended period, can be ſufficiently correct; although the prices, &c. taken on an average of ten or twenty years, may poſſibly tend to much uſeful information. Permit me, therefore, to offer the annexed Table, No. 1. for conſideration of ſuch of your readers as may wiſh to inveſtigate this important ſubject.

Having alſo obſerved, in contemplating on the controverſy about the Corn trade and its laws, that, whichever ſide the writer eſpouſed, he referred to the prices of Windſor market, and to the Tables of the Exports and Imports—leaving out, or taking in, ſuch years as beſt ſuited the purpoſe; anxious to diveſt myſelf of all prejudices, I thought of making out what I call a progreſſive average: And as I have found that ſuch Tables greatly aſſiſted me in forming my opinion on theſe matters, I therefore ſend you Table No. 2. containing a ſtatement of the prices of middling wheat, per quarter, with the quantity of imports and exports, from 1708 to 1799, incluſive, with an average of ten years; taken to ſhow, if poſſible, at what æra Britain became an importing, inſtead of an exporting country. Though, perhaps, no juſt concluſions can be drawn from it; it is, at leaſt, an odd coincidence, that the change ſhould have begun, much about the time the Corn-laws became unſtable. I am, &c.

October 1. J. F. E.

TABLE,

TABLE, No. I.

An Account of the Quantity of Exports and Imports of Wheat, Barley, Oats, Beans, and Rye, taken from the Report of the Committee of Parliament; and an Average of Ten Years taken of them, beginning with the Year 1708, and ending with the several Years mentioned in the Column of Years.

Years.	*Grain.*	On a Ten Years Average.				*Ten Years Average of the Bounties.*	*Excefs of the Average of Exports.*	*Excefs of the Average of Imports.*
		Price of Grain per Quarter.		*Quantity of Exports.*	*Quantity of Imports.*			
		s.	d.	Qrs.	Qrs.	L.	Qrs.	Qrs.
1717	Wheat	42	$4\frac{0}{12}$	113.705	205	—	113.500	—
	Barley	—		215.740	133	—	215.607	—
	Oats	—		9.833	40	—	9.793	—
	Beans	—		39	—	—	39	—
	Rye	—		39.507	39	—	39.468	—
	Total	—		378.824	417	58,532	378.407	—
1727	Wheat	31	$0\frac{2}{12}$	134.199	18	—	134.181	—
	Barley	—		337.851	80	—	337.771	—
	Oats	—		9.458	6.425	—	3.033	—
	Beans	—		8	18	—	—	10
	Rye	—		34.515	5	—	34.510	—
	Total	—		516.031	6.546	77,168	509.485	10
1737	Wheat	30	$5\frac{0}{12}$	190.946	11.504	—	179.442	—
	Barley	—		223.922	3.284	—	220.638	—
	Oats	—		8.831	38.398	—	—	29.567
	Beans	—		20	—	—	20	—
	Rye	—		10.154	17.425	—	—	7.271
	Total	—		433.873	70.611	74,584	363.262	36.838
1747	Wheat	28	$2\frac{1}{12}$	260.647	1.304	—	259.343	—
	Barley	—		294.185	1.563	—	292.622	—
	Oats	—		12.156	12.256	—	—	100
	Beans	—		6	394	—	—	388
	Rye	—		53.668	1.213	—	52.455	—
	Total	—		620.662	16.730	100,383	603.932	488
1757	Wheat	32	$0\frac{4}{12}$	462.910	14.243	—	448.667	—
	Barley	—		370.668	604	—	370.064	—
	Oats	—		9.274	14.754	—	—	5.480
	Beans	—		12	291	—	—	279
	Rye	—		58.082	995	—	57.087	—
	Total	—		900.946	30.887	167,578	870.059	5.759

☞ The excefs of the feveral Imports, viz. 1717-27 37-47-57 & 67, are deducted from the average of the Exports.

TABLE, No. I. *Continued.*

Years.	*Grain.*	On a Ten Years Average. *Price of Grain per Quarter.*	*Quantity of Exports.*	*Quantity of Imports.*	*Ten Years Average of the Bounties.*	*Excess of the Average of Exports.*	*Excess of the Average of Imports*
		s. d.	Qrs.	Qrs.	L.	Qrs.	Qrs.
1767	Wheat	35 $6\frac{10}{12}$	253.136	68.411	—	189.725	—
	Barley	—	217.665	10.194	—	207.471	—
	Oats	—	9.116	101.059	—	—	91.943
	Beans	—	4.114	2.293	—	1.821	—
	Rye	—	23.860	6.626	—	17.234	—
	Total	—	507.891	188.583	91.699	324.308	91.943
1777	Wheat	45 $0\frac{6}{12}$	56.277	154.255	—	—	97.978
	Barley	—	60.070	41.538	—	18.532	—
	Oats	—	24.537	260.670	—	—	236.133
	Beans	—	23.511	26.041	—	—	2.530
	Rye	—	1.774	17.105	—	—	15.331
	Total	—	166.169	499.609	12.637	18.532	333.440
1787	Wheat	42 6	143.548	137.872	—	5.676	—
	Barley	—	119.358	45.873	—	73.485	—
	Oats	—	25.688	265.341	—	—	239.653
	Beans	—	22.511	32.595	—	—	10.084
	Rye	—	6.059	16.729	—	—	10.670
	Total	—	317.156	498.410	40.508	79.161	181.246
1797	Wheat	54 10	94.649	347.446	—	—	252.797
	Barley	—	74.395	63.002	—	11.393	—
	Oats	—	17.080	693.985	—	—	676.905
	Beans	—	15.509	43.045	—	—	27.356
	Rye	—	10.348	38.274	—	—	27.926
	Total	—	211.981	1,285.752	21.864	11.393	973.591
1798	Wheat	55 6	91.893	372.700	—	—	280.807
	Barley	—	54.621	73.502	—	—	18.881
	Oats	—	18.142	730.001	—	—	711.859
	Beans	—	15.946	45.416	—	—	29.470
	Rye	—	7.294	38.967	—	—	31.693
	Total	—	187.896	1.260.586	19.413	—	1.072.710
1799	Wheat	61 6	81.632	407.625	—	—	325.993
	Barley	—	24.192	74.343	—	—	50.151
	Oats	—	16.742	739.196	—	—	722.554
	Beans	—	14.164	46.731	—	—	32.567
	Rye	—	3.283	39.687	—	—	36.404
	Total	—	140.013	1.307.582	10.668	—	1.167.669

☞ The excess of the Exports of 1777-87-97-98-99, are deducted from the average of Imports.

TABLE, No. II.

A Statement of the Prices of Middling Wheat per Quarter, with the Quantity Exported and Imported, from the Year 1708 to 1799 inclusive, with an Average of Ten Years; taken to show, if possible, at what Æra Britain became an Importing Country, instead of an Exporting one.

Years.	*Windsor Price of Wheat.*		*Ten Years Average Price.*		*Quantity of Exports.*	*Quantity of Imports.*	*Ten Years Average of Exports.*	*Ten Years Average of Imports.*	*Excess of the Average of Exports.*	*Excess of the Average of Imports.*	*Gatherwood Tables.*		*Ten Years Average.*	
	s.	d.	s.	d.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	s.	d.	s.	d.
1708	32	10	—	—	8.969	86	—	—	—	—	—	—	—	—
9	62	0	—	—	171.618	1.552	—	—	—	—	—	—	—	—
1710	61	8	—	—	16.607	400	—	—	—	—	—	—	—	—
11	42	8	—	—	80.941	—	—	—	—	—	—	—	—	—
12	36	7	—	—	148.539	—	—	—	—	—	—	—	—	—
13	40	4	—	—	179.969	—	—	—	—	—	—	—	—	—
14	39	9	—	—	180.665	16	—	—	—	—	—	—	—	—
15	34	0	—	—	173.237	—	—	—	—	—	—	—	—	—
16	37	11	—	—	75.876	—	—	—	—	—	—	—	—	—
17	36	1	42	$4\frac{6}{12}$	25.637	—	113.705	205	113.500	—	—	—	—	—
18	30	8	42	2	74.381	—	112.747	196	112.551	—	—	—	—	—
19	27	8	38	$8\frac{9}{12}$	130.533	20	108.638	43	108.635	—	—	—	—	—
1720	29	3	35	$5\frac{10}{12}$	84.343	—	115.412	3	115.409	—	—	—	—	—
21	29	8	34	$1\frac{10}{12}$	82.748	—	115.592	3	115.589	—	—	—	—	—
22	28	5	33	$3\frac{3}{12}$	178.915	—	118.630	3	118.627	—	—	—	—	—
23	27	5	32	1	158.082	—	116.441	3	116.438	—	—	—	—	—

TABLE, No. II. *Continued.*

Years.	*Windsor Price of Wheat.*		*Ten Years Average Price.*		*Quantity of Exports.*	*Quantity of Imports.*	*Ten Years Average of Exports.*	*Ten Years Average of Imports.*	*Excess of the Average of Exports.*	*Excess of the Average of Imports.*	*Gathers wood Tables.*		*Ten Years Average.*	
	s.	d.	s.	d.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	s.	d.	s.	d.
1724	29	3	31	$0\frac{4}{12}$	247.162	148	123.091	16	123.075	—	—	—	—	—
25	38	4	31	$5\frac{7}{12}$	211.175	12	126.885	18	126.867	—	—	—	—	—
26	36	4	31	$3\frac{8}{12}$	143.626	—	133.660	18	133.642	—	—	—	—	—
27	33	2	31	$0\frac{2}{12}$	31.030	—	134.199	18	134.181	—	—	—	—	—
28	43	1	32	$3\frac{1}{12}$	3.935	74.574	127.155	7.475	119.685	—	—	—	—	—
29	37	0	33	$2\frac{3}{12}$	18.993	40.315	116.001	11.504	104.497	—	—	—	—	—
1730	28	10	33	$1\frac{9}{12}$	94.530	76	117.019	11.512	105.507	—	—	—	—	—
31	25	11	32	$9\frac{3}{12}$	13.650	4	110.109	11.512	98.597	—	—	—	—	—
32	21	1	32	$0\frac{6}{12}$	202.612	—	112.479	11.512	100.967	—	—	—	—	—
33	22	5	31	$6\frac{6}{12}$	427.425	7	139.413	11.513	127.900	—	—	—	—	—
34	30	8	31	$8\frac{2}{12}$	408.747	7	155.572	11.499	144.073	—	—	—	—	—
35	34	0	31	3	155.280	9	149.982	11.499	138.483	—	—	—	—	—
36	31	10	30	$9\frac{7}{12}$	118.218	18	147.442	11.501	135.938	—	—	—	—	—
37	30	0	30	$5\frac{9}{12}$	466.071	32	190.946	11.504	179.442	—	—	—	—	—
38	28	1	28	$11\frac{9}{12}$	588.284	3	249.381	4.047	245.334	—	—	—	—	—
39	30	5	28	$3\frac{10}{12}$	285.492	23	276.031	17	276.014	—	—	—	—	—
1740	40	0	29	$5\frac{3}{12}$	54.391	5.469	272.017	557	271.460	—	—	—	—	—
41	36	11	30	$6\frac{6}{12}$	45.417	7.540	275.193	1.310	273.883	—	—	—	—	—
42	26	10	31	$1\frac{4}{12}$	295.698	1	284.502	1.310	283.192	—	—	—	—	—

TABLE, No. II. *Continued.*

Years.	*Windsor Price of Wheat.*		*Ten Years Average Price.*		*Quantity of Exports.*	*Quantity of Imports.*	*Ten Years Average of Exports.*	*Ten Years Average of Imports.*	*Excess of the Average of Exports.*	*Excess of the Average of Imports.*	*Cathernwood Tables.*		*Ten Years Average.*	
	s.	d.	s.	d.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	s.	d.	s.	d.
1743	19	8	30	$10\frac{1}{12}$	375.979	3	279.357	1.310	278.047	—	—	—	—	—
44	19	8	29	$8\frac{10}{12}$	234.274	2	261.910	1.310	260.600	—	—	—	—	—
45	21	9	28	$6\frac{2}{12}$	325.340	6	278.916	1.309	277.607	—	—	—	—	—
46	30	10	28	5	131.105	—	280.205	1.307	278.898	—	—	—	—	—
47	27	7	28	$2\frac{1}{12}$	270.491	—	260.647	1.304	259.343	—	—	—	—	—
48	29	3	28	$3\frac{6}{12}$	545.240	6	256.342	1.305	255.037	—	—	—	—	—
49	29	3	28	$2\frac{1}{12}$	631.007	382	290.894	1.340	289.554	—	—	—	—	—
1750	25	8	26	$8\frac{10}{12}$	950.483	280	380.503	822	379.681	—	—	—	—	—
51	30	5	26	$1\frac{1}{12}$	662.957	3	442.257	68	442.189	—	—	—	—	—
52	33	1	26	$8\frac{7}{12}$	430.117	—	455.699	68	455.631	—	—	—	—	—
53	35	4	28	$3\frac{4}{12}$	300.754	—	448.176	67	448.109	—	—	—	—	—
54	27	5	29	$0\frac{8}{12}$	756.781	201	500.427	87	500.320	—	—	—	—	—
55	26	9	29	$5\frac{8}{12}$	237.466	—	491.640	87	491.553	—	—	—	—	—
56	35	9	30	$0\frac{9}{12}$	102.752	5	488.804	87	488.717	—	—	—	—	—
57	47	5	32	$0\frac{4}{12}$	11.545	141.562	462.910	14.243	448.667	—	—	—	—	—
58	39	6	33	$0\frac{8}{12}$	9.234	20.353	409.309	16.278	393.031	—	—	—	—	—
59	31	6	33	$3\frac{4}{12}$	227.641	162	368.973	16.256	352.717	—	—	—	—	—
1760	28	10	33	$7\frac{3}{12}$	393.614	3	313.286	16.228	297.058	—	—	—	—	—
61	23	11	32	$11\frac{4}{12}$	441.956	—	291.186	16.228	274.958	—	—	—	—	—

TABLE, No. II. *Continued.*

Years.	Windsor Price of Wheat.		Ten Years Average Price.		Quantity of Exports.	Quantity of Imports.	Ten Years Average of Exports.	Ten Years Average of Imports.	Excess of the Average of Exports.	Excess of the Average of Imports.	Cathcart-wood Tables.		Ten Years Average.	
	s.	d.	s.	d.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	s.	d.	s.	d.
1762	30	11	32	$8\frac{9}{12}$	295.385	56	277.712	16.234	261.478	—	—	—	—	—
63	32	2	32	5	429.538	72	290.591	16.241	274.350	—	—	—	—	—
64	36	11	33	$4\frac{4}{12}$	396.857	1	254.598	16.221	238.377	—	—	—	—	—
65	42	8	34	$11\frac{6}{12}$	167.126	104.547	247.564	26.676	220.888	—	—	—	—	—
66	38	4	35	$2\frac{7}{12}$	164.939	11.020	253.783	27.777	226.006	—	—	—	—	—
67	51	0	35	$6\frac{10}{12}$	5.071	497.905	253.136	63.411	189.725	—	—	—	—	—
68	47	10	36	$4\frac{10}{12}$	7.433	349.268	252.956	96.303	156.653	—	—	—	—	—
69	36	2	36	$10\frac{6}{12}$	49.892	4.378	235.181	96.725	138.456	—	—	—	—	—
1770	38	9	37	$10\frac{4}{12}$	75.444	34	203.364	96.728	103.636	—	—	—	—	—
71	45	1	39	$11\frac{9}{12}$	10.089	2.510	160.177	96.979	63.198	—	47	2	—	—
72	52	2	42	$1\frac{3}{12}$	6.957	25.474	131.334	99.520	31.814	—	50	8	—	—
73	52	7	44	$1\frac{9}{12}$	7.637	56.857	89.144	105.199	—	16.055	51	0	—	—
74	49	0	45	$4\frac{3}{12}$	15.928	289.149	51.051	131.114	—	83.063	52	8	—	—
75	47	5	45	10	91.037	560.988	43.443	179.758	—	136.315	48	4	—	—
76	37	11	45	$9\frac{6}{12}$	210.664	20.578	48.015	180.714	—	132.699	38	2	—	—
77	43	6	45	$0\frac{6}{12}$	87.686	233.323	56.277	154.255	—	97.978	45	6	—	—
78	39	1	44	2	141.070	106.394	69.640	129.968	—	60.328	42	0	—	—
79	32	2	43	$9\frac{3}{12}$	222.261	5.059	86.877	130.036	—	43.159	33	8	—	—
1780	38	4	43	$8\frac{8}{12}$	224.059	3.915	101.739	130.424	—	28.685	35	2	44	$5\frac{2}{11}$

TABLE, No. II. *Continued.*

Years.	*Windsor Price of Wheat.*		*Ten Years Average Price.*		*Quantity of Exports.*	*Quantity of Imports.*	*Ten Years Average of Exports*	*Ten Years Average of Imports.*	*Excess of the Average of Exports.*	*Excess of the Average of Imports.*	*Cather-wood Tables.*		*Ten Years Average.*	
	s.	d.	s.	d.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	s.	d.	s.	d.
1781	46	7	43	$10\frac{6}{12}$	103.021	159.866	111.032	146.160	—	35.128	44	8	44	$2\frac{2}{12}$
82	47	7	43	5	145.152	80.695	124.851	151.682	—	26.831	47	10	43	$10\frac{9}{12}$
83	48	2	42	11	51.943	584.183	129.282	204.415	—	75.133	52	8	44	$9\frac{7}{12}$
84	47	9	42	$9\frac{8}{12}$	89.288	216.947	136.618	197.194	—	60.578	48	10	43	$8\frac{2}{12}$
85	42	8	42	4	132.685	110.863	140.783	152.182	—	11.399	41	10	43	$0\frac{4}{12}$
86	37	6	42	$3\frac{6}{12}$	205.466	51.463	140.263	155.270	—	15.007	38	10	43	$1\frac{2}{12}$
87	40	8	42	$0\frac{7}{12}$	120.536	59.339	142.548	137.872	5.676	—	41	2	42	8
88	43	10	42	$5\frac{9}{12}$	82.971	148.710	137.738	142.104	—	4.366	45	0	42	$11\frac{7}{12}$
89	49	11	44	$3\frac{1}{12}$	140.014	112.656	129.513	152.863	—	23.350	51	2	44	$8\frac{7}{12}$
1790	49	11	45	5	30.890	222.557	110.196	174.727	—	64.531	53	2	46	$6\frac{2}{12}$
91	43	10	45	$1\frac{6}{12}$	70.626	469.056	106.957	205.646	—	98.689	47	0	46	9
92	41	10	44	$6\frac{7}{12}$	300.805	22.786	122.522	199.856	—	77.334	42	4	46	$2\frac{4}{12}$
93	46	7	44	$5\frac{8}{12}$	78.789	500.572	125.207	191.494	—	66.287	48	4	45	$9\frac{2}{12}$
94	47	5	44	$4\frac{3}{12}$	152.202	328.446	131.498	202.644	—	71.146	51	4	46	$0\frac{2}{12}$
95	72	3	47	$3\frac{9}{12}$	16.920	318.104	119.922	223.368	—	103.446	74	5	49	$3\frac{3}{12}$
96	71	1	50	$8\frac{1}{12}$	21.809	889.003	101.556	307.122	—	205.566	77	3	53	$1\frac{4}{12}$
97	55	8	52	$2\frac{1}{12}$	51.470	462.579	94.649	347.446	—	252.797	52	9	54	$3\frac{3}{12}$
98	48	7	52	$7\frac{9}{12}$	55.409	396.941	91.893	372.700	—	280.807	49	7	54	$8\frac{9}{12}$
99	66	4	54	$3\frac{6}{12}$	37.397	460.208	81.632	407.625	—	325.993	66	10	56	$3\frac{7}{12}$

FOR THE FARMER'S MAGAZINE.

Obſtacles to Agricultural Improvement.

(Continued from p. 307.)

THE obſtacles to agricultural improvement, ariſing from an improper ſyſtem of connexion between landlord and tenant, are,

1. Want of Leaſes.
2. Improper Covenants.
3. Small Farms.
4. Perſonal Services.
5. Thirlage.

Upon the *firſt* of theſe, viz. *Want of Leaſes*, it may be obſerved, that no farmer, who cultivates his land in a judicious manner, can, with prudence, purſue his plans, either without a leaſe, or upon a very ſhort one.

Were agriculture, like many other profeſſions, in which a ſet of operations can be begun and completely finiſhed in the courſe of a year, and where the buſineſs of that year has no connexion with, nor dependence upon, the following ſeaſons, the want of leaſes would be leſs complained of as a hardſhip. But when we view the practice of a good farmer, and obſerve the connexion and dependence that the operations of one year have, not only upon that which immediately follows, but upon ſeveral ſucceeding years, the extent of the evil ariſing from ſuch a limited term of poſſeſſion will be very apparent.

If a farmer, in ſuch a ſituation, enters to a farm that is clean, and in good heart, he will find his intereſt much more in ſcourging and exhauſting the ſoil, than in improving or keeping it in proper order. A certain and immediate profit will reſult to him, in the one caſe; in the other, he has only the chance of a diſtant and uncertain advantage. It is obvious, that any man entering upon a farm that he is to poſſeſs by ſuch a tenure, muſt have more than common integrity, if he reſiſt the temptation of ſcourging the ſoil; and if he is at any conſiderable expence in improving it, he muſt have great faith in his landlord. The experience of many, both landlords and tenants in England, will enable them to ſubſcribe to the truth of theſe obſervations, as it not unfrequently happens, that after a proprietor has put an exhauſted farm into good order, at a great expence, it is very often ruined in a few years, by the avarice and ill management of a tenant: And again, when the farmer has beſtowed much labour and expence to improve his farm, he has often been turned out of it upon a very

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ſlight pretence, and a ſtranger has reaped the fruit of his induſtry and enterpriſe.

2. *Covenants.*—In diſtricts where lands are let from year to year, covenants appear neceſſary, to prevent the tenant from purſuing a ſyſtem, that may, in a few years, do an almoſt irreparable injury to the property. It is obvious, however, that even this remedy is inadequate to the evil; as every farmer who underſtands his profeſſion, has it in his power to exhauſt his farm, and, at the ſame time, comply with the letter of his agreement, while the ſpirit of it is completely evaded.

From an attentive peruſal of the leaſes in many of the Engliſh diſtricts, it appears, that the greateſt part of them are not only inadequate to the purpoſes they are meant to anſwer, but are abſolutely hurtful, both to proprietors and tenants. This will be more readily underſtood by intelligent farmers, when it is mentioned that whole eſtates, containing many thouſand acres, and conſiſting of every variety of ſoil, are let under the ſame covenants.

That different ſoils require different management, is a matter now ſo well underſtood, as to require no illuſtration. Every experienced farmer knows the difficulty, indeed impoſſibility, of laying down a ſet of rules, that can be invariably purſued upon a ſingle farm in all ſeaſons, even if the ſoil of the whole is the ſame. Even in ſuch caſes (which are the moſt favourable that can be ſuppoſed for covenants), the beſt laid plans are often deranged by bad ſeaſons and unforeſeen accidents. For inſtance, in a caſe where a field has been fallowed and manured for wheat, the ſeaſon for ſowing it may be loſt, by a heavy fall of rain. So circumſtanced, a good farmer, in place of ſowing his wheat when the ſoil is ſaturated with moiſture in Autumn, will give up the idea, and either truſt to a favourable ſeaſon for putting it in during the early part of the Spring, or ſow oats or barley at a more advanced period. Indeed, this appears to be the only ſyſtem that can be followed in ſuch unfavourable circumſtances. Of this, however, the farmer, who is tied down by covenants, has it not in his power to avail himſelf, as, in moſt caſes, the leaſt deviation from the letter of the leaſe, not only forfeits the poſſeſſion, but ſubjects him to a heavy penalty.

Bad as it is, this is but one of the many evils that attend ſuch a ſyſtem of connexion between landlord and tenant. Next to being obliged to follow a fixed rotation, whether the ſeaſon is favourable to it or not, a ſerious hardſhip is experienced when any of his early crops fail, whether owing to defect in the ſeed, or to bad ſeaſons. Wheat, for inſtance, upon particular ſoils, is frequently ſo much thrown out of the ground after a

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ſevere Winter, during which there has been much naked froſt, as to render the ploughing of it down abſolutely neceſſary. The beſt prepared fields for turnips often fail, from the depredations of the fly, a ſevere drought, or other cauſes. In either of theſe caſes, for a landlord to prevent a tenant from ploughing down his bad wheat, and ſowing barley in its place, or from taking a crop of wheat when his turnips have failed, is not only a ſevere hardſhip upon the occupier, but a real injury to the property; it being now well aſcertained, that land ſuffers more from a bad than a good crop; and the richer the ſoil, the greater the injury; as the place that ſhould have been occupied by the crop, is filled with weeds, which at once exhauſt and render the ſoil dirty. Indeed, ſuch accidents happen often, even in caſes where the covenants for cropping are the beſt that can be deviſed, for particular ſoils: How much more frequently muſt they occur upon an extenſive eſtate, where the ſoil comprehends every variety known in the iſland! The ſeaſons are few indeed, that will be equally favourable to the whole of theſe. Under ſuch management, accordingly, the whole of ſuch townſhips are very often loſt, from this erroneous ſyſtem. Inſtances of this kind I have frequently ſeen. A very ſtriking one I remember in the county of Cambridge, a good many years ago, where a common-field of many hundred acres, conſiſting of various ſoils, was all under a bean crop; a part of which was very good, a part much below mediocrity, and a conſiderable portion good for nothing: A loſs the more to be regretted, as it could with great eaſe be prevented, by putting ſuch lands into ſeveralty, and allowing the occupier to purſue a plan ſuited to the nature of his ſoil, and other circumſtances.

The above obſervations are ſtrikingly exemplified in the thriving appearance of thoſe diſtricts, where the lands of every farm are compact and unmixed, where the tenants have leaſes, and are unfettered by any ſevere or diſcouraging covenants: In theſe diſtricts, the variety of ſoil is equally great, as in others where theſe covenants are inſiſted upon; but, by allowing a judicious farmer to manage each of theſe varieties in a way beſt ſuited to its nature, he is commonly ſucceſsful with them all.

In this place, it is proper to mention a very pernicious covenant introduced into many of the Engliſh leaſes, reſpecting the uſe of lime, namely, that of laying a given quantity upon lands of every deſcription, every third or fourth year. Thoſe who have practiſed the lime-huſbandry to any conſiderable extent, and noted the reſults, will be able to form ſome eſtimate of the pernicious effects of this practice; as it is found, that in every inſtance where the application of lime is proper, a full doſe ſhould be given at once, and that ſuch doſe ſhould be regulated by the nature of the

the ſoil, and the quantity of vegetable and other matters contained in it; and ſhould not be repeated, except in the form of compoſt with earth, or earth and dung; or, after the land has been many years in paſture, and a freſh accumulation of vegetable matter has taken place, upon which the lime may operate.

From an attentive peruſal of the covenants, in the Engliſh leaſes particularly, every thinking man will own, that the whole ought to be immediately altered, and leaſes granted of ſuch an endurance, as to give the farmer an intereſt in improving the property. Such a meaſure would unite the intereſts of both parties; and no reſtrictions ſhould be laid upon the tenant, but ſuch as are calculated to prevent him from ſcourging his farm at the end of his leaſe: Even theſe ſhould have a reference only to the laſt three or four years of his poſſeſſion; and, if framed with judgment, that time will be quite ſufficient: They ſhould principally enjoin, the leaving a certain proportion of the beſt lands in graſs, of a determinate age, the ſeeds of which ſhould be ſown after a clean Summer fallow. The tenant ſhould alſo be obliged to leave a certain proportion of his farm in fallow, to be paid for by the incoming tenant, if his ſoil is chiefly clay; or, to cultivate drill crops, if the ſoil is loam or gravel. With theſe exceptions, no other covenants ſhould find their way into leaſes; and theſe ſhould always be drawn up by men perfectly converſant in country affairs.

3. *Size of Farms.*—In looking back to the hiſtory of our own, and, indeed, of every other country, it would appear, that great farms have been conſidered as a grievance, by perſons of a certain deſcription, and a woe pronounced againſt thoſe *who added hedge to hedge*, and *field to field*. Experience, however, the ſtandard to which obſervation and common ſenſe always reſort, has, in a great meaſure, removed the curſe, and taught the intelligent part of the community, that the greateſt proportion of produce, whether for the uſe of men, or our domeſtic animals, is always raiſed upon large farms.

At an early period of our hiſtory, when agriculture was but imperfectly underſtood, and very few people had ſtocks ſufficient, or minds enlarged enough for a more extenſive poſſeſſion, proprietors were glad to let their lands in ſmall lots. Perhaps, too, the deſire, ſo common amongſt the chieftains and proprietors of thoſe times, of increaſing the number of their dependants, partly from vanity, and partly from the protection they afforded againſt the violence to which they were expoſed from their neighbours, might have a conſiderable ſhare in promoting this ſyſtem.

But,

But, to whatever cauſe it was owing, the cuſtom has long ſurvived the circumſtances that gave riſe to it; and many extenſive and valuable diſtricts are ſtill occupied in that way, and under the moſt wretched ſyſtem imaginable, which, if laid into larger farms, and differently managed, would produce an advantage, almoſt incalculable, to the public.

Throughout nearly the whole of the Highlands of Scotland, as well as a very conſiderable part of England, the land is let in ſuch ſmall poſſeſſions, that it is utterly impoſſible to cultivate it in the beſt manner. All experienced farmers agree, that, upon a farm of leſs than 250 acres, the beſt rotation or mode of cropping, cannot be followed out, unleſs in ſome very fortunate ſituations, where good manure can be had at a cheap rate, and where people, alſo, can be hired at a cheap rate, for hand-weeding and hand-hoeing.

With ſuch circumſtances in their favour, many ſmall farms not only may be, but certainly are, cultivated with profit to the tenants. But, nothing ſhort of the immediate vicinity of large towns, can reconcile intelligent farmers to the idea of ſmall farms; and, even in theſe ſituations, it is certain, that a more extenſive poſſeſſion would not only enable the farmer to pay a greater rent, but alſo to live better, and raiſe more produce *.

In ſuch ſituations, letting land in ſmall patches is perhaps the beſt way of occupying it, both for the landlord, the tenant, and the public; and, in the immediate vicinity of all great towns, it ought perhaps never to be cultivated in any other way †. But, in the remote parts of the country, where the means of improvement are obtained with more difficulty, and at a higher price; where the markets for produce are worſe, and where the

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* Vide *Mid-Lothian and Aberdeenſhire Reports.*

† In Mid-Lothian, round Edinburgh, and in the neighbourhood of Aberdeen, a very conſiderable proportion of the lands are let in farms of from ten to fifty acres; the occupiers of which live comfortably, and farm well. The reaſon is obvious:—the near neighbourhood of theſe great towns enables them, not only to diſpoſe of every article of produce to the greateſt advantage, but alſo to procure plenty of manure at a cheap rate; and the numerous population of ſuch towns, renders hand-hoeing, and other operations, much cheaper than in more remote ſituations, where the country is thinly inhabited.—It ought alſo to be taken into the account, that, in ſuch ſituations, the ſmall farmer has it in his power to employ his ſervants and horſes in driving carriages, when they are not employed in ploughing, or other neceſſary operations upon the farm; a buſineſs ſo profitable, as, in many inſtances, to enable the farmer to defray the whole expence of keeping his horſes and family ſervants throughout the year, without touching the emoluments of his farm.

the cultivator follows farming as his ſole employment; a certain extent of land is abſolutely neceſſary, to enable him to purſue a proper and ſucceſsful ſyſtem of huſbandry; and that extent ſhould perhaps not be leſs than from two to five hundred acres of arable land.

Many circumſtances concur to ſtrengthen this opinion. For a farm of the extent mentioned, a conſiderable ſtock is required; and there certainly would be a want of prudence on the part of any man, who would enter upon ſuch an undertaking with barely as much money as would ſtock it. To do juſtice to ſuch a poſſeſſion, the occupier ought always to have a command of money; which at once enables him to do what is wanted for the improvement of his farm, and to bear any loſs, ariſing either from bad ſeaſons, or accidents happening to his ſtock.

On the contrary, a ſmall farmer, whoſe ſtock is barely equal to his poſſeſſion, and who has no command of money, is unable either to do juſtice to the ſoil, or to bear the unavoidable loſſes that occur, even in the beſt of ſeaſons, and to the beſt of farmers. The Reports made to the Board of Agriculture, are unanimous in favour of large farms; and it is beyond a doubt, that, upon ſuch poſſeſſions, the greateſt quantity of produce is raiſed, in perfection, at the leaſt expence.

4. *Perſonal Services.*—In moſt of the improved diſtricts, perſonal ſervices are, in a great meaſure, done away; and ſuch as remain in theſe ſituations, are now to be met with only upon very old leaſes. It is principally in the North and Weſt of Scotland, and the adjacent Iſlands, that they can be complained of as a grievance; and, even in theſe caſes, the error conſiſts in the wiſh of proprietors to unite the profits ariſing from their landed property with thoſe of fiſhing: two things which the experience of ages has fully proved to be incompatible.

Over a great part of the Highlands and Iſlands, the lands, eſpecially upon the ſea-coaſt, are let in very ſmall farms, for rents, paid partly in produce, and partly in perſonal ſervices. The tenant binding himſelf to fiſh for the landlord during the Summer months, it requires ſlender obſervation to diſcover the error of ſuch a ſyſtem: in every diſtrict where it prevails, the lower ranks are in the utmoſt poverty, and the ſoil under the moſt wretched ſtate of cultivation imaginable. The ſame opinion may be formed of all perſonal ſervices. Indeed, wherever they prevail, the people are in the utmoſt poverty; and wherever they prevail to any conſiderable degree, they have a tendency to debaſe the mind, and counteract every thing like improvement.

Owing to the abſence of the men upon the fiſhing, the operations of agriculture, in many places, are conducted ſolely by the women.

women. The returns are what might be expected from ſuch management;—great tracts of good land producing ſcarce any thing but wild poppies, and corn marigolds;—while the poor men, exhauſted by fatigue and hard fare, exhibit the moſt wretched and ſqualid appearance imaginable.

The obvious remedy for this evil ſeems to be, that of ſeparating entirely the buſineſs of fiſhing from that of agriculture;—letting the arable lands, in farms of a proper ſize, to men of judgment and capital; and eſtabliſhing villages, in proper ſituations, to be inhabited by people who make fiſhing their ſole employment. Were ſuch a ſyſtem adopted, and carried to the extent of which it is capable, the Highlands of Scotland, and the adjacent Iſlands, would ſoon aſſume a new aſpect: The huſbandman, having no other employment but his farm, would naturally beſtow his whole time and attention upon its cultivation. The fiſher, on the other hand, depending ſolely upon his own buſineſs, would as readily devote his attention to it. In that way, the agricultural produce of ſuch diſtricts would not only be increaſed in a very great degree, but a much greater proportion of fiſh would be taken: Both fiſhers and farmers would live in a much more comfortable manner than they do at preſent; and the public be benefited by the change.

5. *Thirlage.*—The diſcouragement to agriculture, from this ſpecies of ſervitude, was at one period much greater than it now is, almoſt every farm being ſubject to one ſpecies or another of it. Conſidering the circumſtances of the times, the imperfect ſtate of machinery, and the labour and loſs of time required to grind corn with querns, or hand-mills, we cannot be ſurpriſed at perſons of all deſcriptions paying cheerfully the rates anciently fixed by the lord of the manor, or the community in which they reſided; as the work was not only better done, but the trouble and expence much leſs, than that of grinding by the hand. And had the ſtate of machinery continued equally low as it then was, every ſpecies of thirlage would have been paid as readily now as it was formerly.

Many circumſtances, however, have concurred to render a change in the rate of thirlage, or rather the entire abolition of it, neceſſary. The price of every article manufactured into meal, is not only beyond all proportion higher than it was formerly; but the improvements that have been made in machinery, the greater facility with which the operations are conducted, and the cheaper rate at which ſuch machinery can be erected, have ſo much altered the ſtandard of compariſon, as entirely to ſuperſede the neceſſity of continuing this ſpecies of ſervitude. A. Z.

(To be continued.)

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Tithes Defended.

GENTLEMEN,

THE general ſtrain of your Magazine is inimical to tithes. In all the letters of your correſpondents, and in the obſervations which fall from yourſelves, they are repreſented as a public grievance, and particularly as an effectual bar to agriculture. To me, the ſubject ſeems to be very imperfectly underſtood. Without pretending to offer any thing new upon it, I hope to place the arguments which have been advanced by others on both ſides of the queſtion, in ſuch a collected point of view, as to merit the ſerious attention of your readers: And I truſt to your profeſſed impartiality, for affording them an opportunity of ſeeing an opinion ſtated and defended, that is, in ſome reſpects, different from your own.

Tithes, being one tenth part of the crops produced on land, are juſtly reckoned equal to one fifth part of the rent, or of the land itſelf. But, as the payment of them may be avoided, by throwing fields into paſture, gardens or plantations, their value is thereby leſſened; and they cannot be computed at more than one ſeventh part of the titheable land, or perhaps one eighth part of the whole land in England. This eighth part is held by the ſame right as the other ſeven parts are, and is as much the property of lay impropriators and the church, as lands are of their reſpective owners. Lay impropriators can diſpoſe of their tithes like any other property, but the church cannot; and no agreement or alienation, made by an incumbent relative to the fruits of his benefice, can be binding on his ſucceſſor. Neither the one, nor the other, can be compelled to commute their tithes, except by an act of the Legiſlature; and it is contrary to the true ſpirit of the Britiſh conſtitution, to paſs ſuch an act, without the conſent of the parties concerned. With regard to lay impropriators, no legal interference is neceſſary, unleſs, perhaps, ſome of them poſſeſs tithes by entail. They can, and it is to be preſumed they will, ſell their tithes at any price, in money or land, that will yield them a greater annual income. A compulſive law, therefore, can only affect the clergy, and ſuch laymen as are reſtrained by entails, or by their own whim or family pride, from parting with their tithes. Admitting, in its utmoſt extent, the allegation, 'of tithes being ſuch a grievance, that no ſubſtantial improvement in agriculture can take place, till they are aboliſhed; becauſe farmers will naturally keep in paſture, and townſhips in unproductive commons, large tracts, which could be converted into

fruitful corn-fields, rather than be at the expence of cultivating them while they muſt loſe one tenth part of the produce:' Can it be fairly inferred, from this admiſſion, that titheholders are under ſtronger obligations to ſell their one eighth part of the land to the proprietors of the other ſeven, than theſe proprietors are to ſell their ſeven parts to the titheholders; or that there would be leſs injuſtice in the Britiſh Legiſlature adopting and enforcing the one meaſure, rather than the other, ſeeing, in both caſes, tithes would be equally done away, and that obſtacle to improvement removed? Juſtice, then, is out of the queſtion, (for there can be no juſtice in *forcing* the poor man to give up his cottage, or his *ewe lamb*, to his rich neighbour, for the ampleſt compenſation); and ſo is public good. No doubt, every individual, or claſs of individuals, muſt ſurrender valuable rights and privileges for an equivalent, when the good of the public requires that ſurrender. But, on this undeniable principle, it remains to be proved, that agriculture (which is a chief ſource of public good, and the only ſource of it concerned in this diſcuſſion) would be moſt effectually promoted, were all the lands in the kingdom in the hands of tithe-holders, or all the tithes in the hands of the landed gentlemen. Might not the one grant improving leaſes, and hold out every encouragement to the amelioration of the ſoil, as well as the other?

At the ſame time, if there was a neceſſity for embracing one of theſe alternatives, I frankly acknowledge it to be reaſonable, (not, however, from regard to ſtrict juſtice, or public good, but from conſiderations of expediency and ſound policy), that tithe-holders ſhould be obliged to diſpoſe of their *ſmaller*, rather than landholders of their *larger* poſſeſſions; becauſe, the leaſt evil or inconveniency is always to be choſen; or rather, in other words, that inconveniency is to be preferred which affects the feweſt individuals, and occaſions the leaſt conſiderable change of property. It is upon this ground alone, that a compulſive law can be framed for the commutation of tithes. Now, upon the ſame ground, why ſhould not the compulſion extend to every claſs in the community, and to every practice by which the progreſs of agriculture is retarded? Should not a law, for the commutation of tithes, as hoſtile to agriculture, enact, alſo, 'that the whole pleaſure-grounds in the kingdom ſhall be occaſionally in tillage,' becauſe keeping them as they are is *hoſtile to agriculture*; 'that all lands under improper management ſhall be taken from the preſent poſſeſſors, whether proprietors or farmers,' becauſe, ſuffering them to remain as they are, is *hoſtile to agriculture*; and 'that all injudicious reſtrictions in leaſes ſhould be annulled, which diſcourage cultivators from putting their fields in the higheſt order, and bringing the largeſt ſupplies to the market,' becauſe,

cauſe, beyond all controverſy, ſuch reſtrictions are moſt decidedly *hoſtile to agriculture?* Surely, the proſperity of agriculture is as much intereſted in procuring a legal compulſion, for inſtance, on the Duke of Bedford, (whom you, Gentlemen Conductors, ſo loudly extol), to plough and ſow his fine graſs parks, and on Mr Secretary Young, (whoſe practice, as a farmer, ye as loudly condemn), to relinquiſh his farm to an abler cultivator, and, in fine, on all proprietors, who introduce arbitrary and abſurd clauſes into leaſes, to commit their affairs to wiſer heads, as in procuring a legal compulſion on the clergy and lay impropriators to commute their tithes! Let all, therefore, who are clamorous for the abolition of tithes, beware of overlooking ſimilar abuſes which lye nearer to their own doors, and of throwing, themſelves, impediments in the way of agriculture, akin to thoſe againſt which they exclaim. Let gentlemen, who keep agriculture in trammels by granting no leaſes, or leaſes cumbered with impolitic conditions—and farmers, who are ſlovenly, negligent, devoid of method, or ſteadineſs in their operations, firſt rectify their own errors, which can be done without any application to the Legiſlature—before they come forward as zealous advocates for an important innovation, which cannot be effected without a ſtatute of the realm.

I am far, however, from inſinuating, that the exaction of tithes is not unfavourable to improvements in agriculture. No man is fond of ſowing, when another muſt reap even a part of the produce; far leſs of laying out money to increaſe that produce, when another muſt draw a proportional ſhare of the increaſe, without contributing any thing towards it: conſequently, the more expenſive any improvement is, ſo much the greater muſt be his reluctance to engage in it. There is, beſides, a national prejudice againſt tearing up old graſs lands, and bringing in waſte lands, when ſuch lands are ſubject to tithes, even though there ſhould be a certainty of ample profit to the proprietor or farmer, after diſcharging that burden. Theſe, and other conſiderations, render it highly deſirable to get rid of tithes. But I ſhould be ſorry, if the moſt ſtrenuous ſupporters of this meaſure did not perceive the reaſonableneſs (if not the neceſſity) of obtaining the concurrence and co-operation of thoſe more immediately concerned. Now, there is one principle, by which moſt men are, and all men of good ſenſe ſhould be, chiefly guided in the conduct of their temporal affairs; and that is, their *worldly intereſt*. If it can be made the *intereſt* of tithe-holders to accept, and of proprietors to give an equivalent for tithes, both will eagerly enter into the ſcheme; if not, matters muſt continue as they are.

In this diſcuſſion, lay impropriators are very little intereſted, both becauſe they are reſtrained by no law from ſelling their tithes, when they can do it to advantage, and becauſe the tithes belonging to them are inconſiderable, in compariſon of thoſe which belong to the church. The great body of the clergy, by whom tithes are chiefly drawn, are enlightened, liberal, and by no means inattentive to their ſecular concerns. It cannot be ſuppoſed, that men of this character will reject an exchange of tithes, upon any plan that is more profitable, and leſs troubleſome. In forming ſuch a plan, the firſt ſtep is, to make a juſt eſtimate of the tithes; the next is, to fix upon the kind of compenſation to be given for them. The value of tithes may be much diminiſhed, and almoſt annihilated, by the policy and obſtinacy of farmers and landholders, in keeping moſt of the land in paſture. There is much odium, trouble, and loſs, in drawing them in kind, from lands neceſſarily in corn; and their bargains, for an equivalent in money or grain, are ſeldom advantageous, and yet are fulfilled with a grudge. It may be thought, on theſe accounts, that they ſhould be glad to commute their tithes on very moderate terms. But other conſiderations weigh in the oppoſite ſcale. For, having it in their power to be exceedingly vexatious in their exactions, and to ſubject the occupiers of the ground to ſerious inconveniency and loſs, both in complying with, and in avoiding their claims, and, being entitled to large quantities of grain from the crops neceſſarily raiſed, at times, on ſoils naturally fertile, or rendered ſo by ſkilful cultivation, they might reaſonably expect that their tithes ought to be valued, not according to what they actually receive, but according to what they would receive, if all the land was brought into high order, and a fair proportion of it regularly allotted to titheable grain. It might not, therefore, be an eaſy taſk to aſcertain the true value of tithes; nor would it be leſs difficult to hit upon a kind of compenſation, liable to no ſolid objection, and perfectly agreeable to all parties. Money, daily ſinking, as all the neceſſaries of life riſe in value, cannot be accepted. Land, if ſet apart, not in detached, but in contiguous fields, appears to be the natural and faireſt equivalent. But gentlemen might grudge to part with ſo much valuable property; and might be apt to think, any land, however poor the ſoil, however wretched the condition, and however coſtly the means of rendering it productive, more than a ſufficient price for an annual tribute, which they could leſſen at pleaſure. Thus, a foundation would be laid for wrangling and litigations, not yearly indeed, like thoſe which may ariſe from the preſent mode of collecting tithes, but more ſerious and bitter, as affecting more deeply the permanent intereſts of the clergy on the one hand, and of landed gentlemen on

on the other. Beſides, the clergy, were land allotted to them in parcels lying at a diſtance from each other, would find, in general, no ſmall inconveniency in farming it themſelves, and much difficulty in letting it to advantage; the apprehenſion of which might render them indifferent about a commutation. Were they, on the other hand, to get the full value of their tithes in land, compactly and commodiouſly ſituated, fears might be entertained, even by the ſober and judicious, of their acquiring, thereby, too great influence in the ſtate, and employing it to aggrandize or enrich their order, by throwing their whole weight, as a body, into the ſcale of any faction which would go the fartheſt length to extend their privileges, and increaſe their emoluments. But, abſtracting from this conſideration, which is merely conjectural, and very queſtionable, it is material to obſerve, that lands of this deſcription would form very enviable farms, paying no rent, for men of an agricultural turn, and tempt them to ſeek admiſſion into the clerical office, without any reliſh, or even regard for its duties; while clergymen, of principle and merit, expecting preferment, or drawing near to the cloſe of life, might either injure the lands themſelves, by ſevere cropping, or let them, at a rack rent, to tenants with unlimited powers of extracting from them the utmoſt they can yield. While their poſſeſſions are ſmall, as in Scotland, the community can ſuſtain little harm. But it becomes a matter of general concern, to prevent one ſeventh (or even one eighth) part of all the land, in England, from being expoſed to the danger of being impoveriſhed and exhauſted, by the greed of incumbents and their tenants, neither of whom have any inducement to enrich with manure, and ſubject to an improving rotation of crops, what may not belong to them the enſuing ſeaſon. A law, prohibiting theſe abuſes, and preſcribing a particular mode of management, could not be adapted to every poſſible caſe, might be evaded in numerous inſtances, and would ſeldom be enforced—the public alone being intereſted, and entitled to proſecute tranſgreſſors. In ſhort, the commutation of tithes, for an equivalent in land, is liable to ſeveral objections, and would be attended with much difficulty. Perhaps, the moſt unexceptionable commutation would be ſuch a quantity of the different grains, from that portion of the titheable land, which, by the eſtabliſhed uſage of good huſbandry, ought to be yearly in corn, as might amount to the value of the tithes. Here, ſuppoſing their value to be previouſly aſcertained, it is obvious, that both the quantity and quality of grain muſt vary from year to year, chiefly owing to the ſeaſon, yet often alſo to accidental circumſtances in the cultivation of it. It is impoſſible to fix upon a medium quantity, to be given to the clergy in lieu of

tithes, which would not make them gainers, out of all proportion to what they now receive in tithes, in a ſeaſon of ſcarcity, and loſers, in the ſame proportion, in a ſeaſon of plenty. In the one caſe, landholders and farmers would complain of paying ſo much, when their lands yielded ſo little; and, in the other caſe, the clergy would complain of receiving ſo little, when the land yielded ſo much. And yet, to make the quantity greater or leſs, according to the produce of the land, would open a ſource of contention, ſimilar to what is occaſioned by the exaction of tithes. Nor would the quality of the grain delivered be always ſecure from challenge. Objections might be ſtarted againſt it, as the worſt raiſed on the farm, as not properly cleaned, or as deficient in meaſure. Other objections, more or leſs ſolid, may be urged againſt this plan; and other plans may be ſuggeſted, better in themſelves, or more agreeable to thoſe concerned. But the greater latitude there is for variety of opinions concerning the propereſt meaſure to be adopted, ſo much the more difficult muſt t be to fix upon one, that will meet with general approbation, and fully anſwer the deſired end.

One thing, at leaſt, muſt be admitted as ſelf-evident, that the commutation, whether in land, grain, or any other commodity which will keep pace in price with the neceſſaries of life, muſt be ſo ample as to render the acceptance of it palpably for the intereſt of the clergy. Bnt the intereſt of the landed gentlemen muſt alſo be conſulted: For we muſt not ſuppoſe them to be ſo devoid of common ſenſe, as to puſh forward, or even agree to a meaſure from which they are to derive no advantage. Knowing that tithes might as well remain in their preſent ſtate, as come into the hands of any other than the proprietors of the lands from which they are drawn, and, conſequently, that there can be no competitors in the purchaſe; theſe proprietors might be ſhy and low in their offers; and, however willing to give an equal price, would rather want them than pay too much. Now, it would be as unfair to force *them*, by a law, to buy at an extravagant rate, as to force *the clergy* to ſell at an under rate. The terms, therefore, muſt not be ſo very favourable to thoſe who are to diſpoſe of the privilege, as to be prejudicial to thoſe who are to purchaſe that privilege. Unleſs the latter can let their lands, when relieved from tithes, ſo high as to put ſomething in their own pockets, beſides the annual value of the equivalent given, the commutation can be of no importance to them. For example, graſs lands, which now bring 40s. per acre, muſt not only yield 10s. of permanent additional rent to be paid for tithes, but alſo ſomewhat more to the landlords, otherwiſe they can have no inducement to ſtir in the matter. And it is a part of the ſubject which has not yet been fully canvaſſed, but which merits

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ſerious conſideration, whether all the titheable lands in England, did a commutation take place, would fetch, upon leaſes of a moderate length, viz. from 15 to 21 years, above one fifth of more rent than they do at preſent;—what proportion of this increaſe might be fairly aſcribed to the nature and duration of the leaſes, and what to the abolition of tithes; for, it is by the amount of advanced rent beyond the additional fifth, *ariſing from the abolition of tithes ſolely*, that proprietors can be intereſted in endeavouring to effect a change in the tithe ſyſtem. That they do not expect ſuch a change to be profitable to them, I am warranted to infer, from their never being cordial and unanimous in taking any ſteps which even pointed towards the accompliſhment of it, and from their not purchaſing tithes, which laymen are not precluded from commuting or ſelling. Theſe glaring facts afford a violent preſumption, if not a convincing proof, that tithes are not productive of miſchief to the extent imputed to them; and that the commutation of them would not be attended with any ſubſtantial national advantages. You, Gentlemen Conductors, juſtly obſerve, that the prevalent uſe of horſes in huſbandry, over oxen, is the ſureſt evidence of the former being more profitable to the farmer: May not I, in like manner, conſider the continuance of tithes, without any attempt to get free from them by thoſe concerned, as an inſuperable argument of their being preferable to any ſubſtitute that can be found? The ſuperior excellence of oxen has been demonſtrated in unanſwerable theories, and the uſe of them warmly encouraged by patriotic propoſals and premiums. Periodical writings have been the vehicle of much popular declamation and plauſible reaſoning againſt tithes; a deep impreſſion has been made upon the public mind—the general prejudice has been confirmed—a ſpirit of murmuring and clamour has been excited: yet oxen are not uſed, and tithes are not commuted. Are mankind ſtupid and perverſe? or, do they find it to be their intereſt that things ſhould remain as they are?

From the preceding obſervations, I flatter myſelf, the following concluſions will be conceded: That tithes are not yet felt to be an evil of ſuch magnitude, as to call for the interpoſition of the Legiſlature—that, whenever they ſhall prove materially and extenſively hurtful to the national intereſt, thoſe who ſuffer moſt from them will come forward with a concerted and digeſted plan for laying them aſide—and that, the more neceſſary and important this meaſure ſhall become to the community, the higher price may titheholders reaſonably demand, and purchaſers afford to pay, for tithes. In our admirable conſtitution, there are evils inherent, which cannot be eradicated, without running the riſk of undermining and overturning the fabric it-

ſelf. If tithes be of this deſcription, it is devoutly to be hoped, that the nation will be wiſe enough never to lay a finger upon them; if not, we may ſafely truſt, that the good ſenſe, or (what is nearly the ſame thing) the *ſelf-intereſt* of our gentry and clergy, will deviſe the means for commuting or aboliſhing them.

Yours, &c. T. S.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Obſervations on Thraſhing Machines.

GENTLEMEN,

HAVING obſerved, in your laſt Number, a deſcription of a thraſhing mill, which is perhaps attended with rather much expence for very general uſe, I take the liberty of ſuggeſting the following hints, the reſult of practical experiment, to thoſe who may yet have occaſion to erect thoſe machines; as the knowledge of the invention is now very generally diffuſed, and its utility every day more and more acknowledged. It is very probable that a number of inefficient attempts have been made to bring this machine to its preſent ſtate, or even to ſuch a degree of mediocrity, as to do any tolerable execution. I have never yet obſerved any account of theſe trials, and ſhall therefore mention ſome of them that have come to my own knowledge.

The oldeſt of them, that I am acquainted with, is repreſented, in a drawing, in the book, entitled 'Bailey on Arts,' publiſhed, London 1772. This thraſhing mill was erected, in England, by a Mr Evers of Swillington, in Yorkſhire, and was uſed on the farm of Mr John Turton at Rugby. The corn was laid on a circular floor, and, as it moved round, a great number of ſtampers ſtruck the corn, and by this means beat out the grain. It appears to have been a very complicated machine; and I never heard of any other conſtructed on the ſame principle.—A thraſhing-mill was erected, many years ago, on the farm of Licklyhead, in Aberdeenſhire, by Mr Gordon of Premnay, the proprietor; but was not long continued. It was on the principle of flails.—Mr Francis Peacock, dancing-maſter in Aberdeen, made a model of a hand-mill, on the ſame principle, alſo, of flails.—In the Repertory of Arts, there is a drawing of a hand-mill, ſaid to be uſed, with great ſucceſs, in Virginia, which acts on a principle ſimilar to that of flails. Over a grated floor, a number of long aſh poles are placed, whereof one end being faſtened down, the other is elevated by means of a ſmall lever, and let fall, by its own elaſticity, upon the corn, which is placed above the grating.

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—If ever a hand-mill can be brought to perfection, it appears to me that this is the principle moſt likely to ſucceed by, as the reſiſtance muſt always be the ſame; nothing more being required than ſufficient force to bend the end of the pole: And I ſhould further ſuppoſe, that ſomething of this kind might be adapted to large machines, for beating of barley or bigg, with leſs injury to the grain, than moſt of the preſent inventions for that purpoſe.—Hand-mills were alſo conſtructed by a perſon at Stonehaven, in the county of Kincardine; and alſo by another perſon in Banffſhire: but I am unacquainted with the names of the inventors. Theſe machines laboured under the ſame diſadvantage as thoſe which I conſtructed; the turning of them was much too ſevere work for two men, and the ſmall execution they did, was by no means adequate to the expence.—Other hand-mills have alſo been unſucceſsfully attempted in this country, in imitation of the preſent thraſhing mills, which it is unneceſſary to particulariſe. But I find, that, in the Commercial Magazine for July 1800, a hand machine, worked by two men, is there deſcribed; which appears to have anſwered the purpoſe of thraſhing, and to have been uſed in England; but at an expence of four times as much as if a horſe's power had been applied to it.—In Leiceſterſhire, the power of a horſe has been added to ſome of theſe ſmall machines, which thraſh about a quarter of corn in two hours; and is there found to anſwer for moderately-ſized farms.—Mr George Cotterel, iron-founder on Leith Walk, invented one altogether of caſt iron, excepting the frame. I am not certain whether Mr Cotterel or Mr Meikle was the firſt inventor of the principles of this machine; but I underſtand that Mr Meikle claims the invention in this country.—I have been informed, that thraſhing mills, on nearly the ſame principle, have long been in uſe in Sweden; though I have never as yet got ſo exact a deſcription of them, as to ſay, how far they may reſemble that invented by Mr Meikle, otherwiſe than that they acted on the principle of a ſcutch: Nor do I mean, in the ſmalleſt degree, to detract from that gentleman's merit, as there is nothing, in the nature of things, to hinder two people, in different parts of the globe, without the leaſt knowledge of one another, to invent the ſame machine.—A great improvement is ſaid to have been made upon the accuracy of theſe machines, by Mr Stevenſon, foreman to the late Mr Winlaw, which has materially diminiſhed their friction; in particular, by affixing moveable iron plates on the ſurface of the beaters, which, by means of two ſcrews, enables them to be ſet at any diſtance from the rollers, without altering the reſt of the machine. All theſe machines are ſaid to ſtrike downwards, which is conſidered a material improvement.

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Though there is little doubt, that, on large concerns, thraſhing mills, ſuch as repreſented in your laſt Number, may be neceſſary, yet, in general, machines of a much leſs ſize and expence might probably be invented, which would require only the power of one horſe or ox, in ſituations where it is impoſſible to find water, or improper to uſe wind, to impel the machine. After the foregoing tranſient ſketch, I ſhall now therefore briefly communicate what has occurred to myſelf, in ſeveral experiments that I myſelf have made, or obſerved from others, in many attempts to reduce this machine to a ſimple, cheap, and uſeful inſtrument of agriculture. Others may avoid our errors; and, if they chooſe to avail themſelves of the hints here given, may probably employ the time and expence (which perhaps would be uſeleſsly thrown away), either in erecting an efficient machine, ſuited to their local circumſtances and ſituation, or in adding ſome important improvement to thoſe already invented.

Having made five different attempts to make a proper thraſhing mill, to work by the hand, I next proceeded to conſtruct one to go by water; and, as I wiſhed to make uſe of as much of the machinery from the hand-mills as I could, it was on a very ſmall ſcale, the whole apparatus within the barn, that is, excluſive of the water-wheel, occupying (the frame included) only a ſpace of four feet ſquare. Inſtead of a drum, as preſently uſed, four ſcutches were attached to an axis: the ſcutch was 16 inches diameter, that is, from the edge of one to the edge of the oppoſite: they were each three inches broad, and $1\frac{1}{4}$ inch thick, bevelled off on the edge that ſtruck the corn, and ſhod with iron on the face; and the back of the ſcutch ſo far ſet in within the circle, that nothing but the ſharp edge touched either the corn or the ſtraw, which greatly reduced the friction that is incurred by the preſent method of uſing a great drum, with a number of pieces of wood, ſhod with iron, faſtened upon it. A caſt-iron wheel, 16 inches diameter, with 40 teeth, was faſtened upon the end of the axis of the water wheel. This turned a pinion of 7 teeth; on the axis of which was another wheel of 40 teeth, which turned another pinion of 7 teeth on the end of the axis of the ſcutch. This machine I uſed for three years and a half; and, when neceſſary, it could thraſh 6 bolls of corn, Aberdeenſhire meaſure, in the hour. It was fed by two buck rollers, driven with a band, in the common method. Upon removing to another farm, it did not anſwer the ſituation of the water-fall, and I therefore erected a new one; and, thinking many parts of the old one rather ſlight, I made the new one entirely of wood. On the axis of the water wheel, is an inner wheel of 8 feet diameter, containing 96 cogs, which turns the drum by a cradle of 9 rounds. The drum is 3 feet diameter,

and

and 4 feet broad. This machine requires double the water of my former one, and does not exceed three bolls in the hour's thraſhing at moſt. From this it would appear, that a ſcutch of 16 inches diameter, driven with velocity, will clean more corn from the ſtraw, in a given time, than a drum of 3 feet diameter, or larger. Where, therefore, the ſituation of the ground would admit, I would propoſe an inner wheel of 8 feet diameter, mounted with caſt-iron ſegments, containing about 200 teeth; and that this ſhould turn a pinion attached to the end of the ſcutch, containing about 7 or 8 teeth. Where this plan is not convenient, the motion may be multiplied, as already deſcribed; only, inſtead of a wheel 16 inches diameter, and 40 teeth, I would propoſe one of 2 feet diameter, and 60 teeth; and that there ſhould be 9 teeth in the pinion, inſtead of 7. And, if the pinion is made in one piece with the gudgeons of the ſcutch, and made with wings to be inſerted into its axis, it will be ſo ſtrong, as to be under very little riſk of breaking, which I found the ſmall pinions of 7 teeth, fitted on a gudgeon of hammered iron, very apt to do. The wheels of 2 feet diameter, will alſo be proportionally ſtronger; and the firſt motion, communicated either by water or a horſe, will require to be very ſlow. In conſtructing the preſent horſe machines, ſeveral of them have a large horizontal wheel, placed above the horſes heads, with the intention of communicating, at once, a quicker motion to the pinion. Others have a wheel of a leſs ſize, ſunk in a pit below the horſes feet; and in order to increaſe the power, croſs bars are fixed to the axis of either of theſe, ſo that two, four, or ſix horſes may be employed, when neceſſary. Inſtead of this, I would propoſe to increaſe the length of the lever; and, as the great objection to a long lever, is, that the axis which goes from the horizontal wheel into the barn, when made too long, is apt to twiſt, and thereby very greatly increaſe the difficulty of moving it round, I would propoſe this axis to be cut in two. There are ſo many ſimple methods of making the one turn the other, that it is quite unneceſſary to mention them here. I have always obſerved, that thoſe machines are moved with moſt eaſe, when the wheel is below the horſes feet. Where this is adopted, the fixing the ends of the cut axis can be attended with very little expence: and, if the lever is increaſed one third in length, one horſe will perform nearly the ſame work as two; becauſe it is impoſſible to get two or more horſes to exert their ſtrength together, when going in a circle; and, the larger the circle is, the more the horſe will be enabled to apply his ſtrength, with eaſe to himſelf.

In the conſtruction of any of the hand-mills I had an opportunity of ſeeing, a large caſt-iron wheel was fixed on the ſame

axis,

axis, whereon were the double handles for turning the machine, with the intention of acting as a loaded fly. But it would appear to me, that, if a loaded fly was fixed on the axis of the ſcutch or drum, inſtead of being attached to the firſt movement, it might be of great aſſiſtance to a ſmall ſingle horſe machine. In the courſe of the experiments I made to conſtruct a hand-mill, I found, from repeated trials, that a croſs, with a weight fixed on each of the four ends, had much more power, as a fly, when once ſet in motion, than a circular wheel with even a greater weight attached to the circumference of it, had. I do not pretend to argue upon this point, with thoſe who maintain a contrary opinion; but, as I was certain of the accuracy of the experiment, I can venture to aſſert, that whoever tries the two methods on a thraſhing mill, will find, that, however my theory may appear erroneous, I am correct in practice, always taking it for granted, that the croſs is made of iron, not of large pieces of wood. As this is dangerous to approach, I did not find any harm from connecting the four points by a light rim of wood; but the weights ſhould be attached to four points only. The whole weights, which were of lead, were faſtened upon four points of a wheel, ſeven feet diameter; when it was found, that the power of it in overcoming a ſudden reſiſtance, was greater than when the weights were regularly divided round the circumference of the ſame wheel. This ſudden reſiſtance, occaſioned by the corn going in too thick betwixt the rollers at one time, is the great impediment to the conſtructing of a thraſhing mill on a ſmall ſcale; and I am pretty certain, that a loaded fly, applied to the end of the ſcutch, would very much contribute to remove it.

I truſt that thoſe gentlemen, who either have invented, or uſe the preſent powerful thraſhing mills, will not conſider theſe obſervations as any reflection meant on them. I never was poſſeſſed of a farm which required more than three or four bolls to be thraſhed daily; therefore, am not quite a competent judge of the neceſſity of thoſe very large and heavy machines, which are now in ſuch general uſe. My only intention is, to ſuggeſt to ſmall farmers, that (as the uſe of thraſhing mills is now univerſally acknowledged, both as a ſaving of time and of manual labour, and on account of the ſuperior manner in which they detach the whole of the grain from the ſtraw, and, where wooden rollers are uſed, run ſo very little chance of bruiſing any of the grain, that a much leſs quantity will ſerve to ſeed an acre, than when thraſhed by a flail) they may be accommodated with machines ſuitable to the uſe of almoſt any farm, which, with one horſe, or ox, where water is not to be had, will do all the ordinary thraſhing required; and, on any emergency, by adding another,

another, may enable them to bring a quantity of their grain to market, when, by any other means, it would be totally out of their power. I am, Gentlemen,

Aberdeenshire, 13. *Sept.* 1802. A. G.

P. S. Since writing the above paper, I find that, on the 19th of July last, Mr William Lester, of Cotton-end, Northamptonshire, engineer, enrolled a patent for a new thrashing-mill, the description of which is, 'A machine for separating grain from the straw, by which a great saving of corn will be effected;' and is on an entire new and simple construction. It consists of a cast-iron cylinder of network, over which the straw is worked, by its rotatory motion, under a number of friction-wheels that work by their own gravity, forcing the corn through the meshes of the cylinder, and discharging the straw over its surface, without injury; and has the peculiar advantage of thrashing all kinds of grain or pulse, without any alteration of the machinery. I am sorry it is not in my power to give you any further particulars of this invention.

12. *October* 1802. A. G.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Information requested concerning Implements used in Husbandry, &c.

GENTLEMEN,

As a reader of your publication, I have to return you my thanks for the pleasure I have received in the perusal of the several numbers. Being confined, by commercial employment, to this city, I have to lament a very considerable disadvantage which I experience from the want of an accurate knowledge of the implements used in husbandry.

Reflecting upon the means for information on this point, I have thought, that the possession of models of the different implements would enable me to form a more correct idea of the subjects discussed. I therefore take the liberty of applying to you, to request that you will direct me what steps to take to procure these models. You, perhaps, may be acquainted with some persons in London, who keep, or can make the models; not only those of new invented instruments, but also, and *particularly*, of those which are in common use, and which experience has pointed out to be fitted for the different branches of husbandry.

A difficulty has likewise occurred, in understanding the provincial terms. Is there any general Agricultural Dictionary, explanatory

planatory of theſe terms? I ſhould think one which had theſe explanations, and a ſhort deſcription of the implements uſed in the different countries, with ſmall marginal plates, would be very acceptable to a numerous body of the inhabitants of theſe kingdoms.

Mr Middleton, in his Survey of the County of Middleſex, mentions a plant as a ſubſtitute for madder, the tops of which anſwer all the purpoſes of weld, and effectually curdle milk, giving the cheeſe a peculiar, but very agreeable flavour; but declines informing his readers as to the name of this plant, alleging, that its qualities are ſo eſtimable, and the advantages of the cultivation of it ſo very great, that the Dutch, and the inhabitants of other countries, who ſupply us with madder, would ſoon exert themſelves to obtain it from us, did they but know the plant. There is ſomething ſo different from Mr Middleton's uſual liberality in theſe obſervations, and the reaſoning ſo illegitimate, that I cannot forbear mentioning it. If the cultivation of that plant is ſo very deſirable, it muſt be made known to the cultivators of the ſoil, and, truſting to our own exertions in the management of it, we need be under no apprehenſions of the rivalry of other nations. I ſhould therefore expect, that no ſuch fears would operate upon your minds, and that all the information of this plant (if valuable) you can procure, will be made public.

Obſerving ſome extracts made, in your Magazine, from Tooke's Review of the Ruſſian Empire, I beg leave to aſk, if any tranſlation from the Ruſſian (into the Engliſh or French language) has appeared of a treatiſe publiſhed by the Economical Society of St Peterſburg, mentioned by Mr Tooke, in his third volume, p. 316, in which they have unfolded the principles upon which people ought to proceed, in laying out new villages or colonies, in uncultivated diſtricts; and which, Mr Tooke ſays, is highly deſerving to be read by all who are likely to have any concern in the matters to which it relates.

In one of the numbers of the Medical and Phyſical Journal, publiſhed in London the latter part of laſt year, mention is made of a plough uſed by the natives in Aſia, of a very ſimple conſtruction; but no deſcription is given of it: Perhaps ſome of your friends may be acquainted with it, and will favour the public with an examination of its merits.

Many perſons of reſpectability and profeſſional knowledge, among whom may be mentioned Sir John Sinclair and Mr Middleton, have conſidered, that commercial may be exchanged for agricultural employment, from laudable motives, and with no diſadvantage to thoſe who ſhould leave the former for the latter employment. Sanctioned by ſuch opinions, I hope you will not

conſider

conſider me as impertinent, in making theſe inquiries reſpecting a buſineſs with which I might appear to have no direct perſonal concern. Wiſhing your publication may be productive of public advantage, I remain, Gentlemen, your, &c.

London. J. C.

P. S. As ſome general knowledge of Botany is deſirable, what works can you recommend for ſuch information as would be valuable to an agriculturiſt? Many, and expenſive works, are publiſhing, but they do not meet my idea of utility to the claſs of farmers.

Mr Amos, ſteward to John Cartwright Eſquire of Boſton, has publiſhed a work, in which he recommends a drill-plough of his own conſtruction. Is this book in the courſe of being reviewed, and is his machine deſerving attention? J. C.

FOR THE FARMER'S MAGAZINE.

On the Huſbandry, &c. of the Hindoos, in a Letter from an Officer in the Army, to his Friend in this Country.

Allahabad, 9th July 1798.

THE cultivation of the land goes forward here with a greater degree of ſucceſs, than, from previous information reſpecting this province, I had reaſon to expect. During a ſhort ride in the morning, you may obſerve, in this ſeaſon, nearly an hundred ploughs at work. Theſe are, however, if poſſible, of a more awkward and inefficient ſtructure than thoſe I have already deſcribed. The whole plough and harneſs is daily carried to the field by the ploughman, who is ſometimes a ſlender boy.

The ſetting in of the rains, is everywhere the commencement of the ploughing ſeaſon: during the dry weather, the ſoil becomes too hard to be penetrable by an implement ſo paltry as an Hindoſtanee plough. The ſugar plantations, of which there are a few here, are an exception to this. Theſe are watered, and, conſequently, can be dreſſed earlier. At preſent, they are in great forwardneſs, overtopping, by the height of a yard, the ſmall fences by which they are encloſed. Wheat, bajerrow, and Indian corn, other crops of this ſeaſon, are pretty well advanced, having already received one weeding.

Some manure is here laid upon the ground—not cows dung, that is too precious; but any kind of filth, or rubbiſh, which can be collected in a farm-yard. This is carried out in baſkets, borne, not on the back, as is done by our Highland damſels, but on the head. Among ſuch barbarous uſages, it is not worth while to make

make compariſons; yet, in the quantity carried, the Highlanders have a decided ſuperiority over a race, whoſe feebleneſs and want of energy, as well as ſtrength, is conſpicuous in every thing.

A perſon is hurt to record ſuch proceedings. They derive importance, however, from the conſideration, that ſuch ſervile drudgery conſtitutes the lot of, perhaps, the far greater part of the human race. Could you imagine it?—even in theſe humble toils, and in this obſcure deſtiny, the peaſant is inſecure. When he goes abroad to the market, or to reſume his labour in the field, he arms himſelf, according to his circumſtances, with a tulwar, a ſpear, or a bludgeon; and truſts more, for protection againſt violence, to the ſtrength of his individual arm, than the general police of the country.

Among the early Romans, we are told, that every ſtranger was an enemy, and that by one word they expreſſed both. Here, a man's enemy is perhaps his neareſt neighbour. When, therefore, he leaves his houſe, he prepares himſelf for, what frequently happens, an encounter with thieves or robbers *.

The inhabitants of Oude, in their political aſſociation (if a ſtate of anarchy can merit ſuch a name), are in that condition which was decreed as a curſe upon the deſcendants of Iſhmael—'their hand is againſt every man, and every man's hand is againſt them. They have actually before their eyes, what Mr Paine only had in beatific viſion—a view of ſociety reduced to its 'firſt principles.' Each individual travels either with the proſpect of defending himſelf againſt robbers, or of aſſuming, himſelf, that perilous vocation. Hence, every man who has been abſent for any conſiderable time, has a ſacrifice offered to the gods for his ſafety, if haply he return ſafe † to his family.

Thus, within the ſhort period of a man's life, fell ſuddenly to pieces the great empire of Hindoſtan, almoſt without external violence; like an animal body in the lateſt ſtage of putrefaction, from the extent and maturity of corruption that pervaded the whole of its members. Every province, almoſt every diſtrict, diſplayed a faithleſs ſervant of the empire, or ſome adventurous chief uſurping abſolute power, and practiſing all the extravagance of an unprincipled mind on its ſudden elevation to the plenitude of deſpotiſm. While you, therefore, inveigh, in ſuch impreſſive terms, againſt European rapacity and uſurpation; in the Eaſt, we who are on the ſpot, content ourſelves with the humble perſuaſion,

* 'Why are ye come out againſt me with ſwords and ſtaves, as againſt a thief and a robber?' is a queſtion you may here put to almoſt every man you meet; for by every one you are held in ſuſpicion.

† *Vide* Seir Mutaquherin, by Gulam Hoſſein Khan.

ſion, that, for a country in ſuch a ſtate to be poſſeſſed by an Engliſh army, is a kind diſpenſation of the Ruler of nations.

It is felt, and acknowledged as ſuch, by the natives themſelves. The protection it affords gives them an opportunity of laying aſide their ſwords and ſpears, or, if you pleaſe, of literally 'turning them into ploughſhares.' With regard to myſelf, this conviction has not ariſen from books, but from ocular demonſtration.

The working cattle are a ſmall ſpecies of oxen, of a hardy breed, as the uſage they endure abundantly teſtifies. That ſuperſtitious veneration paid *to the cow*, does not always inſure humane treatment to this animal; ſo looſe is the connexion between religious belief and moral conduct. Black cattle, during the dry ſeaſon, are ſo poorly fed, that they barely ſurvive. A dozen of milch cows will hardly equal the produce of a ſingle one of yours, either in the article of cheeſe or butter.

The buffalo ſeems here an uſeleſs animal. It enters not the draught, and not often carries burdens: a coarſe kind of rancid ghee is the only vivre it ſeems to afford. The goat, however, ſeems to attain the full perfection of the ſpecies. While the graſs is burnt up by the exceſſive heat, it nibbles ſucceſsfully among the roots for a ſubſiſtence. At preſent, while the moiſture produces abundant vegetation, it wallows in ſo great plenty, that the dug is diſtended ſo as to drag upon the ground.

In the diſtrict of Allahabad, the breed of ſheep is ſmall, even for India; and the fleece conſiſts of a coarſe black hair, altogether unſuitable for cloth. Of this harſh ſtuff, however, ſuch as it is, ſmall rugs are made for the ſhepherds to ſhelter them from the rains, and to wrap their body during the night. Under theſe, you ſee them ſhivering in the fields, following a few ſheep, or tending hogs. This laſt is the moſt humiliating condition to which either a Hindoo or a Muſſulman can be reduced: and the Prodigal muſt have been in great diſtreſs before he ſubmitted to his patron, who 'ſent him into his field to feed ſwine.'

The wages of theſe 'hired ſervants' are ſo extremely ſmall, that there is little difficulty in believing that they are ſometimes reduced to the neceſſity of participating in huſks with the animals they tend. It is certain, that, even in times of plenty, our grooms have been found eating the horſes meat, although their wages are regularly paid, and amount to double the price of country labour.

In this diſtrict, the whole ſtock of a farmer is not perhaps worth eight rupees: When the price of his cattle is included, it ſtill amounts only to a paltry ſum. He is unſafe in laying out money on his farm; and he does not attempt it. The beſt informed native I have had the opportunity of conſulting, aſſures

me, that the Ryot has no ſecurity whatever in the poſſeſſion, no more than his ſuperiors the Aumil and Zemindar.

The rents are levied by an irregular banditti, under the denomination of an army, who, if oppoſed, drive away the whole of a village, burn the houſes to the ground, and carry off the women and children. An action of this kind happened in the morning, on the ſame ground which our army occupied in the evening, during our march to this place from Lucknow. If the ſtock of the farmer be inſecure, money lent is almoſt equally ſo. A man who poſſeſſes any thing beyond a mere ſubſiſtence, is induced to expend it on perſonal ornaments—rings for his wife's noſe and ears, or bangles for her ankles: Thus the whole property of a family is generally borne on the backs of its members. Whatever is not diſpoſed of in this way, is hid in the ground. There are traditions of money being concealed under this fort, and almoſt all the great buildings in India. Though I am apt to believe that ſuch reports are often current without any foundation in truth, it is certain, the Begum of Azof Dowlah paid the demands of the Company made upon her huſband by treaſure thus depoſited.

She ſent an eunuch with certain directions into a rugged field, with a ſtring which he fixed upon a peg he found there; from this he ſtept backwards, keeping the peg in the ſame line with his eye, and a third object mentioned in his directions: When he had extended his line to a certain mark, he there ſtopped, and ordered the ground to be opened, when 21 lacks of rupees were taken up.

A few perſonal ornaments are therefore the whole wealth, even of the better ſort of Ryots; and this wealth flows in the ſame channel with his affections. A favourite child is frequently decorated with taliſmans of ſilver, hung round his neck, or tied to his arms. Theſe, according to the popular creed, are of power to repel all the machinations of demons, and to ward off all that hoſt of ills to which 'fleſh is heir to.' The Muſſulmans indulge the ſame ſuperſtition, and are equally confident that they derive the ſame advantages, by incloſing in the trinkets a few holy ſcraps from the Koran.

The fort of Allahabad, from its ſituation at the confluence of of the two ſacred ſtreams, the Jumna and the Ganges, has a high reputation. It is reſorted to, as well as Benares and Gyah, by great numbers of devout pilgrims from all parts of India. There is, at preſent, an encampment of four thouſand Mahrattas from the diſtant province of Guzarat. They are the retinue of a pious widow, who has travelled thus far with the bones of her huſband, with a view to immerſe them at the point of junction of the two holy ſtreams.

Each

Each individual pilgrim avails himſelf of this opportunity of waſhing away, not merely his ſins, but all filthineſs of the fleſh, by this uſeful ablution. The ceremony of purification is performed by ſhaving every part of the body by the hands of a Brahmin, and afterwards bathing. A ſmall offering, for this ineſtimable privilege, is preſented to the officiating prieſts of the place. Next to their intereſt, that of the Prince is conſulted in theſe ceremonies: A ſmall tax muſt be paid to the Nabob of Oude, for their admiſſion to the ſpot. This tax amounts annually to a conſiderable ſum, with the collection of which the Engliſh have avoided all interference, ſince their acquiſition of the fort. It is farmed out at a certain ſum to a native, who annually remits the amount to the Lucknow treaſury.

Thoſe officers, whoſe apartments are near the point of junction, are not a little annoyed by the midnight oriſons of theſe devotees. Their howlings, under the windows, rather reſemble the noiſe of a mad-houſe, or the wailings of the damned, than the aſpirations of ſober piety.

What is ſtill more embarraſſing, part of theſe ceremonies muſt be performed in a vaſt ſubterraneous cave, in the middle of the fort, which is ſupported by pillars, and extends far and wide in every direction. This noiſome dungeon, which affords to unbelievers an image of the entrance of the gate of hell, rather than the porch of paradiſe, leaves the caves of the Sybils far behind it in every thing tremendous and diſguſting; and is ſaid to be infeſted by ſnakes and noiſome reptiles, and to penetrate under ground as far as Delhi. The popular legends of every country are thus marvellous and abſurd.

It is certain, however, that the heat, and ſuffocating vapours which continually exhale from it, are likely to prove fatal to the worſhippers: They are ſeen fanning each other, after returning from viſiting it, with all the ſymptoms of having inhaled a noxious atmoſphere. In a few minutes my curioſity was literally *ſtifled*; I returned, ſatisfied with enjoying a Piſgah view of thoſe diſmal manſions of ſtench and devotion.

The pilgrims, to be admitted into this cave, muſt enter the gate of the fort; and, as piety has frequently been employed as a cloke for cunning, the guard muſt be vigilant, and of greater ſtrength, than might otherwiſe be required. Our recent poſſeſſion of a place, where the ſuperior ranks may be jealous of our encroachments, or envious of our power, demands peculiar circumſpection. The Greeks, we are told, entered Troy under pretence of devotion: As the Muſſulmans are not more celebrated for honeſt dealing, than the Greeks, our commanding officer muſt be commended for reſpecting a caution which they deſpiſed:—'*Timeo Danaos et dona ferentes.*'

Religious fear is alone capable of extorting caſh from a Hindoo; for, of all the trials of his faith and patience, that is the moſt ſevere, which touches the purſe; and the only difficulty the Brahmin has to encounter, is to thruſt his fingers there. An obſtinate ſtruggle between avarice and piety, was lately exhibited by a large party of Mahrattas, about 12,000, who arrived here a few months ago. The Brahmins were offered four or five thouſand rupees, in the name of the whole caravan: while a larger ſum was demanded on their part, accompanied with a threat, of excluding the pilgrims from the holy precincts, if it was not immediately paid down. This had little effect, till a Brahmin, who knew his *monde*, offered to cut off one of his thumbs from his hand. Had this been the conſequence of their obſtinacy, they muſt not only have loſt caſt, but, according to their own creed, the blood of this holy man muſt have been expiated by their whole poſterity. Such ſins of fathers are viſited upon their children, not for two or three generations, but *ad infinitum*.

In competition with ſuch a deſtiny as this, the ſum demanded was certainly but a trifle: to the good pilgrims it appeared ſo; and they inſtantly paid it down.

Some of theſe victims of ſuperſtition annually drown themſelves at the junction of the ſtreams; and this being the moſt acceptable of all offerings, it is performed with much ſolemnity. The perſon who thus undertakes a journey to the manſions of Bliſs, muſt preſent a larger ſum to the prieſts, than the common herd of pilgrims. The rapidity with which the victim ſinks, is regarded as a token of his favourable acceptance by the god of the river. To ſecure the good inclination of the deity, they carry out the devoted perſon to the middle of the ſtream, after having faſtened pots of earth to his feet.

The ſurrounding multitude on the banks, are devoutly contemplating the ceremony, and applauding the conſtancy of the victim; who, animated by their admiration, and the ſtrength of his own faith, keeps a ſteady and reſolute countenance, till he arrives at the ſpot, when he ſprings from the boat, and is inſtantly ſwallowed up amidſt univerſal acclamations. Five or ſix different perſons, of either ſex, have, ſince our arrival, in defiance of nature, thus boldly ſnatched the crown of martyrdom.

Burning a wife on the funeral pile of her huſband, is certainly the moſt painful exaction ever made by ſuperſtition on human ignorance. It ſeems, however, to be outdone by this more ſplendid effort of fanatical zeal; and drowning, at Allahabad, appears to have ſuperſeded the uſe of the funeral pile: Of the latter, I have heard no inſtance ſince our arrival in theſe provinces.

In a country where the deſpot is every thing, and the people nothing, immenſe public buildings are erected by the labour of his

his ſlaves. The Fort of Allahabad, after all the cheapneſs of labour, muſt have coſt millions. It is ſaid to have been undertaken during the later years of Acbar's reign, and to have been continued by ſeveral of his ſucceſſors. It is an immenſe ſtructure, ſo deeply founded on the brink of the two rivers, as to bid defiance to the aſſaults of both.

Theſe is perhaps no building of equal ſize in Europe. This, however, is all that can be ſaid in its praiſe; for it has not even the appearance of being capable of holding out againſt a battering train. It is as deſtitute of elegance as of ſtrength; for though it contains an imperial palace, and other ornamental buildings, it preſents no idea to the beholder but that of the monarch's power, and his want of taſte.

The Royal palace, and its twelve adjacent ſquares, are a complete model of an Aſiatic zenana. The upper rooms of this imperial apartment command a view into each ſquare, where probably were lodged the choiceſt beauties from the twelve ſoubadaries of the empire. Into theſe, the king of the world might frequently look; but it is hardly to be imagined he could do more.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Fattening of Cattle.

GENTLEMEN,

I coincide in opinion with Sir John Sinclair, Baronet, that in chooſing cattle for feeding rapidly, or getting very fat within a ſmall ſpace of time, great attention ſhould be paid to compactneſs, and ſymmetry of form, fine ſmall bones, thin hides, and prominent eyes. I cannot, however, agree with thoſe who think that theſe marks are the *only* indications of a propenſity to fatten quickly, or to attain early maturity. On the contrary, I am convinced from experience, that an indifferent form, rather large bones, and a thickiſh hide, are ſometimes found in cattle which have as great a tendency to fatten within a ſmall ſpace of time, as thoſe with ſmall bones and thin hides. I have never, however, diſcovered this, but when the beautiful form, and ſmall bones, were covered by a ſkin, which, though *thin*, was *firm and hard*, while thoſe with larger bones, and thickiſh hides, handled *ſoft and ſilky*. I would therefore recommend, that in chooſing cattle for converting their food into the moſt money *per ton*, in a given time, more attention ſhould be paid to the *feel* or *touch*, than to ſmall bones and fine form, though theſe are generally the concomitants of the

eſſential property of handling well. The opinion of that eminent breeder and grazier, George Culley Eſq., is founded on long and extenſive practice, and accurate obſervation; and he recommends cattle whoſe ſkins feel ſoft, or 'mellow.' He alſo ſays—'Indeed, it is the nice touch or feel of the hand, which in a great meaſure conſtitutes the judge of cattle.' To men of experience, theſe remarks are unneceſſary. It is to young and inexperienced graziers and breeders, that I particularly recommend them; and I do ſo, under a conviction that men of this deſcription are frequently miſled and injured, by attending to *appearances only*. In your Ninth Number, a correſpondent regrets, that ſome Galloway and Highland cattle were not brought forward againſt thoſe of Mr Maſon of the county of Durham; and ſeems to hint, that the preference would have been given to the ſmall cattle. My opinion is, that if five of each kind had been ſhewn, they would have *all* been very handſome and fat. But how could the judges have determined to which to give the preference? or of what utility would ſuch a ſhew have been to graziers and the community, if the owners of theſe cattle could not have produced a ſatisfactory account of the quantity and kind of food conſumed by each from the time of their being calved? I am decidedly of opinion, that neither weight, nor ſize, nor ſhape, nor thinneſs of hide, nor ſmall bones, ſhould have been the criterion of excellence; but that thoſe would have been entitled to the prize, which had converted ſimilar food into the moſt money *per ton*. And here, I muſt expreſs my diſapprobation of *pampering* cattle, and making them extremely fat with oil-cake, meal, or any kind of expenſive food. That breed ſhould not be encouraged, which will not fatten readily on graſs in Summer, and with turnips, hay and ſtraw, in Winter; theſe being the only kinds of food which can be uſed to a ſufficient extent in this kingdom.

With reſpect to the moſt profitable ſize of cattle, that muſt, in a great degree, be determined by the markets they are intended to ſupply; ſmall ones being generally eſteemed the moſt proper and beneficial for internal conſumption, 'or cutting out;' and large beaſts for the ſupply of our ſhipping: And I have no doubt, but that, by great care and attention in ſelecting males and females, a breed of large cattle (though far from the huge ſize) has already been introduced into ſome diſtricts of this kingdom, which will not only gain as much weight, in proportion to the food they conſume, but produce beef of as fine a quality, and proportionally as little offal, as any ſmall cattle whatever. The conteſts, however, between the advocates for the different ſizes and breeds of cattle and ſheep, will probably not terminate, till a great many accurate experiments determine the ſuperiority; and as I conceive that breeders and graziers, eſtimating their profits by the ſize, or price

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per head, is extremely injurious to the country, I think it is much to be regretted that experiments of this nature are not tried upon an extenſive ſcale, and for a great ſpace of time. In conducting theſe experiments, the food of each animal ſhould be exactly and regularly weighed. The animals themſelves ſhould alſo, occaſionally, be weighed, and the reſults of *both* operations carefully recorded. The experiments mentioned by your correſpondent B. C. (p. 222, No. X.) are important, and I warmly commend his efforts and accuracy. But, to purſue ſo momentous a buſineſs to a ſufficient extent, and to conduct all the neceſſary trials with propriety, would certainly require much leiſure, judgement, and capital. He recommends it to thoſe who have ſufficient leiſure. I will go further, and beg leave to recommend it, *with the greateſt earneſtneſs*, to ſome of our agricultural ſocieties, and to ſay, that, in purſuing it, I conceive they would be employed to infinitely more advantage to their country, than in offering ſuch premiums and rewards as they have lately done. For inſtance, there is certainly more merit in determining which is the moſt advantageous mode of raiſing a large quantity of grain, or in aſcertaining which kind of animal will raiſe the moſt human food on a certain quantity of graſs, or turnips, than in offering rewards to thoſe who have the greateſt number of children. The opinion of Dr Adam Ferguſſon, and ſeveral others who have wrote on the ſubject of population, are upheld, I believe, by facts, namely, that a great number of people is the *conſequence* of a plentiful ſupply of food, and proper employment. Now, can any thing be more prepoſterous, than to encourage an increaſe of population, in preference to thoſe experiments which would diſcover the beſt modes of raiſing human food, or before a ſufficient ſupply can be raiſed for ſupporting ſuch an increaſe of people? This is only increaſing human miſery. Very different indeed would be the effects of the other purſuit; and let not the great ſpace of time which it would undoubtedly take to bring it to a proper concluſion, deter theſe ſocieties from beginning it. Even if the preſent generation could not reap the benefit of their labours, poſterity would find them highly advantageous. But I am far from being of opinion that the preſent age would not be much benefited by ſuch exertions. Over and above aſcertaining which are the moſt proper and beneficial kinds of animals, they ſhould aſcertain and publiſh, as extenſively as poſſible—what are the moſt profitable kinds of food for, and the beſt modes of, feeding them; whether changes of food are uſeful; whether condiments can be beneficially uſed; and which of theſe are moſt proper, &c. &c.

I ſhall now conclude with a few obſervations on what Sir John Sinclair ſays on milk, at page 150. of your laſt Number. That this is a wholeſome, comfortable, and nutritious kind of food,

I readily admit. I therefore applaud the benevolent and patriotic motives of the worthy Baronet, in contending, with ſo much zeal, for an extenſive uſe of it; and ardently wiſh, that every landholder and farmer would extend the advantages of a cow, or cow's milk, to as many families on their lands as they poſſibly can accommodate. I muſt, however, beg leave to ſay, that, notwithſtanding I have had conſiderable practice in the management of milch cows, I have never met with any that would give twenty-eight quarts of milk per day, for ſeven months in ſucceſſion; nor do I believe there is one in five hundred, that will give that quantity for even ſeven weeks in the year. For ſix months after calving, I believe about twelve to fourteen quarts will be found an high average for good, and extremely well fed milkers. Sir John calculates the value at 4d. per Engliſh quart. This price is alſo very different from that I have been accuſtomed to, or heard of. I never before, till the ſcarce years of 1800 and 1801, (when, in *ſome* cities and towns, it reached 2d. per quart), heard of new milk being ſold at more than from one penny to three halfpence; and, in ſeveral parts of this kingdom, it is now ſold at the loweſt of theſe prices per quart. Near cities and towns, dairy farming is practiſed to a great extent, becauſe the farmers find it moſt profitable; and, for the ſame reaſon, they, in many parts of the country, conſume their graſs and hay in breeding and fattening cattle: and, while they thus promote their own intereſt, they alſo promote that of the community at large. But, if the occupiers of land were generally impreſſed with an opinion, that a milch cow would pay *eighty guineas* in ſeven months, (the ſum condeſcended on by the worthy Baronet), our land would, in all probability, for a time, overflow with milk, whatever might be its effects on many other good things we enjoy. It would then be ſo plentiful and low-priced, as to become a loſing concern. Too many would adopt another ſyſtem; and thus an unſteadineſs of market, with all its concomitant evils, would be ſeverely felt by the public. Yours, &c.

PASTORALIS.

P. S.—As I underſtand ſome communications on the diſorders of cattle and ſheep will be acceptable, I now ſend you an account of the methods by which I have frequently ſeen thoſe called the dry murrain, and bloody urine, cured. I have frequently given to cattle labouring under the firſt of theſe diſorders, large quantities of boiled turnips mixed with butter, caſtor oil, and other powerful laxative medicines, and alſo ſome injections, without being able to produce the deſired effect. After having employed ſeveral *cow doctors*, and loſing ſeveral beaſts by this ſevere diſorder, I determined (after having, in vain, given

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at the mouth conſiderable quantities of the above laxatives) to give the under mentioned ſtrong injection, which, in the courſe of ſix or eight hours, produced a very copious diſcharge of dung. Apprehending danger from the greatneſs of this diſcharge, I uſed grated wheaten bread boiled in water, and water and wheat meal boiled together, which, in the courſe of a few days, ſufficiently checked the diſcharge. During the illneſs, the beaſt ſhould be kept moderately warm, and have warm water, and afterwards *oat-meal and water*, for ſeveral days. I have found, that cattle are leaſt ſubject to this diſorder, when ſome turnips are given with their fodder. The injection I uſed, was, three pints of common gruel, four ounces of Epſom ſalts, half a gill of tincture of ſenna, and half a gill of olive oil, well mixed. Laxative medicines given at the mouth, and bleeding to prevent inflammation, are alſo neceſſary. If the firſt glyſter does not produce the deſired effect, a repetition of it will ſeldom fail to effect a cure.

In the bloody urine, I never (except in one inſtance, when the delay was too long) knew the following method prove abortive. As ſoon as the bloody urine is obſerved, the animal ſhould be houſed: immediately afterwards, let a pint of common ſea ſalt be diſſolved in cold water (as much as is neceſſary to hold it in ſolution), and given at the mouth. A few hours afterwards, the animal will have a great inclination to drink, and large quantities of clean cold water ſhould be offered. If it will not voluntarily drink a great deal, conſiderable quantities ſhould, from time to time, be adminiſtered by force, till the urine turns to its natural colour, which it will generally do in the courſe of twenty-four to thirty hours. Inſtead of the ſalt and water, I have, with equal ſucceſs, uſed about a gallon of milk, well ſtrained, after a conſiderable quantity of old ruſty iron had been heated red hot, and put into it. If the quantity of iron be ſufficient, the thirſt will be very great, which ſhould be ſatisfied as above. I apprehend that, in this diſorder, the greateſt danger proceeds from the exceſſive heat, or fever, bringing on a kind of murrain, or ſtoppage of dung, provincially 'the feather cling.' To obviate or remove this, I have always found that a few ounces of Locatelli's balſam, given at the mouth, is effectual. It generally takes place within a day or two after the other diſorder ceaſes.

4. *June* 1802. P——s.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Preſervation of the Urine of Cattle.

GENTLEMEN,

YOUR invaluable medium of conveying and circulating uſeful knowledge in rural affairs, has afforded me much ſatisfaction. At beſt, I am but a novice in that ſcience, and know very little; however, ſuppoſing that the beſt-informed know but little, I am ſtrongly prompted to ſcribble the verieſt trifles. Juſt in my neighbourhood a farmer reſides, who keeps generally from ten to twelve black cattle, for the moſt part confined within doors. His byre is on the high ſide of the public road. The goodman, for fear of being incumbered with the urine, has cut a hole in the wall, through which (I ſuppoſe) a third part of all the manure produced by theſe cattle iſſues! When cattle are kept on turnips or graſs, they generally dung *thin*, and void a great quantity of urine, which, falling upon the thin dung, runs away with the beſt part of the manure, when managed in the above ſlovenly manner. To prevent this, when cow-houſes are erected, they ought to be well paved: the deſcent for the urine to run off, ſhould terminate in a receiver ſunk within doors, ſuppoſe an old oil or tar barrel, with a lid to cover it, allowing a ſmall hole in the upper edge under the lid, for the urine to run in. As often as this is full, it ſhould be carried to the land, and ſpread thinly over the ſurface. If this is inconvenient, it may be emptied on the dunghill, which thereby will be increaſed in quantity and quality conſiderably.

I cannot pretend to calculate the real loſs of manure, by the neglect of the above precaution; but I can ſay, that the practice I am cenſuring, is almoſt univerſal, and that I have ſeen a farmer often put himſelf to unneceſſary trouble and expence in procuring manure, while he had as much of the real eſſence of dung ſwimming about his doors, as, if properly managed, would have ſupplied the deficiency. But negligence and prejudice are fatal enemies to every ſpecies of improvement: therefore, every farmer ſhould ſet about rooting out theſe deep-rooted noxious weeds, and alſo endeavour to keep them down in all time afterwards. Yours, reſpectfully,

Aug. 1802. BERBERIS.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Squirrels deſtroying Young Trees, &c.

GENTLEMEN,

The following letter, which I received from England, concerning the deſtruction of young woods by ſquirrels, you will be ſo obliging

obliging as inſert in your next Number, with thoſe few remarks on the ſubject which it has given riſe to.

'*London*, 17*th September* 1802.

'I have juſt returned from Devonſhire. During my ſtay in the northern part of that county, I was made aequainted with ſome prodigious ſcenes of deſtruction, committed by ſquirrels upon the young plantations there. Though I had always known that they hurt young trees, I had no idea they ever produced ſuch extenſive miſchief. The larch particularly ſuffers.'

This lively little quadruped was not known in the Lothians of Scotland till within theſe thirty years, when it is ſaid to have been introduced by the benevolent Dutcheſs of Buccleugh, as an ornament to the woods of Dalkeith; from whence it has ſpread its ſpecies over moſt of the foreſts in Mid and Eaſt Lothian.

The ſquirrel feeds on nuts, fruits, and corn, of which it lays up great ſtores for Winter proviſion; but, in Summer, it generally lives on the tender ſhoots of trees, particularly of the larch. Hence it becomes ſo deſtructive to young plantations.

Almoſt every ſpecies of ſquirrels, alſo, where they become numerous, are deſtructive to fields of corn of all kinds, as well when green as when ripe. In North America, ſome years ago, the crops of grain were ſo devoured by theſe animals, that the States found it neceſſary to offer a reward of threepence *per* head for every one that was killed. How numerous they were, may be gueſſed from this, that, in one year, Penſylvania alone paid, in rewards, on this account, eight thouſand pounds currency.

Theſe obſervations are deſigned to put gentlemen on their guard; and to ſhow, not only to the planters of trees, but alſo to the farmers, and of courſe to the community at large, the neceſſity of deſtroying, inſtead of foſtering ſquirrels.

A. S.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Want of Encouragement to Tenants.

GENTLEMEN,

I HAVE peruſed different numbers of your valuable publication, and venture to ſend you the following obſervations, which I ſhall be gratified to ſee inſerted in your next Number, provided you conſider them as worthy of a place.

I live in a part of the country rather remote, where great improvements in farming have only been of late introduced, but which poſſeſſes many natural advantages. The ſea nearly ſurrounds us, and the ſoil is ſuſceptible of every melioration known among agriculturiſts.

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On the introduction of the modern ſyſtem of management, numberleſs difficulties were to be ſurmounted, every thing being to do, and the generality of the inhabitants prepoſſeſſed againſt all innovation; however, much has been already accompliſhed by the ſpirited exertions of many individuals, and the wiſe encouragement of ſome landlords.

Prejudices have given way in the lower ranks, and the greater number of the tenantry are eager to improve their farms, and to ſee the face of the country changed and ornamented: knowledge, of courſe, is diſſeminated, and capital has greatly accumulated. But, ſtrange as it may appear, many very conſiderable land-owners rather betray a diſpoſition to retard, than to expedite real improvements. The terms of the leaſe are often arbitrary, and the landlord is too often reluctant in contributing a reaſonable proportion towards permanent improvements, which are in themſelves abſolutely neceſſary, and of which it is equally prepoſterous and unjuſt to exact or expect the execution totally at the tenant's expence, more eſpecially as the uſual duration of his leaſe is ſeldom adequate to indemnify him. Even ſome proprietors do not only contribute reluctantly, but nearly refuſe every aſſiſtance upon any terms. They accept the higheſt offer for the naked farm, and, provided the ſtipulated rent be regularly paid, they appear indifferent how the tenant accommodates himſelf. They indeed expreſs wiſhes to ſee their lands improved, but the honour of their motives may be doubted.

Straitened circumſtances do not, by any means, ſeem to form an excuſe for this backwardneſs. It perhaps ought to be attributed to jealouſy againſt their inferiors, and a deſire of immediate aggrandizement, by pocketing an additional income without deduction. Such reaſons as theſe are entitled to no merit; but it would become indelicate to dwell on this part of the ſubject. I preſume you will not permit your work to appear as a vehicle of reſentment; but I am under no particular impulſe of that kind. I do not intend to throw out reflections on all the land-owners in this part of the country; for if ſome of them had not adopted a more liberal way of proceeding, agriculture would never have made the progreſs amongſt us which it has already done; but, at preſent, it would be eaſy to prove that the landlords are, upon the whole, more backward than the tenantry. Many do not chooſe to become converts to their real intereſts, or to the laſting good of their country, but prefer a continuance of the illiberal policy of laying hold of what they can at the time, and allowing futurity to ſhift for itſelf. Under ſuch a ſyſtem, the tenant muſt be a drudge: his mind, broke down by his ſituation, diſqualifies him for exertion, even though the neceſſary means were to come into his poſſeſſion. His family, rudely educated,

cated, are only fit for labourers or low mechanics; and one great link of the chain which connects an enlightened ſociety, is thus rejected or deſtroyed.

When nothing induces ſuch land-owners to purſue a different line of conduct, what is to be done? Is there no remedy but ſubmiſſion, until long experience convinces them of their error? One of your correſpondents very properly obſerves, that thoſe landlords who have no bowels of compaſſion, are not to expect their lands to be altered for the better, or well managed. This, to be ſure, may be reckoned puniſhment enough for ſuch obſtinacy; but the misfortune is, that the puniſhment affects many beſides themſelves, and evidently lights on the community at large.

It conſiſts with my knowledge, that the reſtrictions of entails are urged, by ſome illiberal land-owners, in defence of their conduct; and I do not heſitate to admit, that ſuch reſtrictions are often burdenſome, and perhaps the weightieſt apology that can be advanced. But few caſes are found to agree, in all reſpects, with each other; and I am fully convinced, that more weight is frequently attached to the reſtrictions which entails impoſe upon the heir, than is really merited. I acknowledge, that the ſyſtem of entails is not calculated to *haſten improvements;* but, *that it operates as an obſtacle*, I am by no means diſpoſed to grant.

I would be glad to ſee theſe ſubjects taken up by ſome of your more able correſpondents; and, if I conceive it is agreeable, I will alſo take another opportunity to tranſmit my ſentiments; but I am always anxious to know the opinions of perſons better informed.

I am, Gentlemen, a ſincere well-wiſher to your undertaking, and what every honeſt man is, if under no miſtake,

October 1802. A PATRIOT.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Manures.

GENTLEMEN,

SOME very uſeful letters, on Manures, have appeared in your Magazine. I muſt, however, beg leave to ſay, that if I am to judge by ſome of them, I will find great difficulty in determining what mode it is moſt advantageous to purſue in the management and application of dung. For inſtance, 'A Northumberland Farmer' ſays, that it is ſlovenly and unprofitable to apply that article in a rough or half rotten ſtate; and, in the letter of 'Novice Junior,' it is ſtated, that Dr Fenwick ſays 'half-rotted litter is beſt.' Pray, how am I, without experience, to ſettle this

this matter? It may lead to mischievous consequences, as some farmers may adopt the one mode, and some the others. And they cannot, I conceive, *both* be right. I shall therefore be much obliged to you, or some of your intelligent correspondents, for such information as may be the means of settling this disputed point; and as I am satisfied that the Conductors of the Farmer's Magazine, will clearly see the necessity of the information requested, I trust that it will not long remain a *desideratum* among their readers. It also appears to me necessary for you to publish some information as to the chemical definition of *hot* and *effete* lime; also, that much remains to be said as to the time of the year in which dung and lime are most beneficially used for the various kinds of crops on the different qualities and conditions of soils; and particularly, whether it is most proper to apply lime in Autumn, or in May and June, to dry land intended for turnips; and also, as to the most proper quantities of that valuable article for the different kinds of land: For, on these points, farmers are much divided in opinion.

On all, or any of these subjects, I shall be very thankful for proper directions through the medium of your very useful Magazine. Yours, &c.

RURALIS.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Working of Oxen.

GENTLEMEN,

MUCH has been said about the working of oxen, but very little of it is to the purpose. For the information of your readers, I shall communicate my method of working these animals, which, I trust, from your known impartiality, will gain a place in your Magazine.

Out of my stock of cattle, I select, when two years old, (that is, after Harvest, when they are rising three), four of my stoutest, best-shaped stots, from the field. These, to accustom with harness, I bind up in my oxen byre every night, for a week or two; and they are then taken out in pairs, and put into the plough with a pair of older trained oxen, yoked before them. This keeps them steady, and prevents their running off. After being yoked in this manner two or three times, I turn them again amongst the cattle in the straw-yard, where they remain until Spring. They are then three years old. I yoke them all four (after training them as above stated) in a plough by themselves, which requires a little boy to drive; and in that way they are used until

til four years old, when they are worked in pairs as horſes, by one man only, and do the ſame work at ploughing; for, at carting, &c. I never uſe them, having as many horſes as do that part of my work. When uſed in pairs, one man works two yokings, and the cattle only one each. If, however, I had occaſion for two cattle ploughs, each pair might work very well two yokings, the ſame as horſes.

In Summer, they get nothing but paſture graſs, being turned into the field after the work is performed, and continue there until the working hour returns.

In Winter, they are fed like my other cattle; that is, they get a feed of turnips once a day with ſtraw; and in this way do my young ſteers and cows conſume my turnips; for I do not fatten any for the butcher.

In the Spring ſeaſon only, I am obliged to ſubſtitute hay, betwixt the time when my turnips are conſumed, until the graſs comes up.

Should any of your correſpondents want any thing additional on the ſubject, I ſhall communicate it through the medium of your Magazine; for this is the firſt time I have uſed the liberty of troubling you. In addition to the above, if, when three years old, eight ſtots were worked, four and four alternately, it would be a great relief; and I have uniformly found that cattle, moderately worked, thrive better than thoſe that are idle or unemployed.

Having thus ſtated a few particulars relative to the working of oxen, permit me to requeſt an anſwer to the following queries concerning ſowing of wheat in the Spring months. You will ſee the neceſſity of inſerting them in your next Number.

Whether is there any variety of wheat peculiarly adapted for ſowing in the Spring ſeaſon?

What is the quantity uſually ſown per acre at that time?

Is any other preparation neceſſary than what is commonly beſtowed? By preparation, I mean pickling the ſeed. Yours, &c.

Anguſſhire, 13th October. ALFRED.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Anſwers to Queries on Vegetation.

GENTLEMEN,

I HAVE read your Queries on Vegetation, and undertake to anſwer a few of them juſt now. Some more I ſhall produce when my leiſure permits. You aſk, in your title concerning Air, Query 3. Will fruit trees produce fruit in London? I am a gardener in the ſuburbs; nay, I may ſay, almoſt in the heart of the city of Edinburgh, and was told that my trees would not bear well; but I find mine bear exceedingly well. From experience, I do not ſee that ſmoke, or the air of a city,

city, has any bad effect on the common fruit trees. My peach and apricot trees bear ill; but that is a common ſubject of complaint, and may not be occaſioned by the ſituation. It has been remarked, and, I think, with juſtice, that roſe buſhes thrive remarkably well in a city. But none of the pine or fir tribe will live in it.

Title 7. Query 4.—What is the reaſon for putting American and other foreign plants into peat? and are there any other kinds of plants that thrive particularly well in that ſoil? Anſwer—The only American plants put into peat ſoil, are thoſe that are natives of the ſame kind of ſoil, viz. the ſwamps of America. Theſe are, the kalmias, rhododendrons, ledums, andromedas, and azaleas. For the ſame reaſon, gardeners put every ſpecies of erica or heath alſo into peat earth.

Same title, Query 3.—Is there not an aſtringency in peat bog, hoſtile to vegetation? How is that to be corrected? Anſwer—It is probable, ſubſtances are preſerved in peat bogs, by the aſtringent or tanning principle. But there is alſo the ſame principle, in a ſtrong degree, in oak bark; in a ſmaller degree in birch bark, Peruvian bark, Winter bark, and, more or leſs, in almoſt all vegetable ſubſtances: yet, theſe are all ſubject to putrefaction. Drain a peat bog of its moiſture, which is the liquor that preſerves it, and the putrefactive proceſs will deſtroy the aſtringency of peat, as it does that of other vegetable ſubſtances. Peat will then rot like wood, tolerably faſt, if it is not kept too dry; but it will rot quickly, if expoſed to the fermenting heat of new dung. Reducing it to aſhes will alſo obviouſly extirpate the aſtringency of peat.

Title 1. Query 9.—What ſoils, in which there is no calcareous matter, produce grain or peas in perfection? Anſwer—Peat earth, in which there is no calcareous matter, I have tried in my garden, and found to produce grain in perfection, without any manure. Drain off the peculiar moiſture of peat, and the rain will render it a fertile ſoil.

Title 2. Query 4.—Do plants draw the whole, or any part of their nouriſhment, from air? Anſwer—It muſt be obvious, that all that ſort of plants which delight to grow on the tops of houſes and walls, and other very dry places, and yet have leaves thick and full of juice, ſuch as the houſe leek, and the whole genus of ſedums, and ſeveral others, derive the moſt, if not all their nouriſhment, from the air.

Same Title, Query 13.—Are there any plants that grow well under the ſhade of others, and what are they? Thoſe that I have moſt remarked for that quality, are the privet and holly.

Title 3. Query 3.—What has been the effect of watering young or old plants with hard water? Anſwer—See Dr Home's Principles of Agriculture for experiments on this ſubject. He ſays, hard water appears to afford a ſtrong nouriſhment for plants. I have diſcovered that nitrous acid exiſts in all hard waters, and that all pit-well waters are hard, and contain a nitrous acid joined to an abſorbent baſe.

Title 4. Query 5.—In raiſing plants from cuttings, is it not neceſſary to keep them in the dark, until they take root? Anſwer—Cuttings muſt be kept moiſt. That is all that is neceſſary.

Oct. 1802. A GARDENER.

ORIGINAL COMMUNICATIONS.

PART II.

[An imperfect account of the extenſive drainage, executed by Mr William Young, in the pariſh of Urquhart and county of Moray, having appeared in our laſt Number (p. 319.), it is with much ſatisfaction, that we now preſent a correct and enlarged deſcription of ſuch a meritorious improvement, communicated by a worthy friend, to whom we lye under many obligations. While we embrace this opportunity of thanking our correſpondent, it is barely an act of juſtice to ſtate, that the ſcheme deviſed by Mr Young, for draining the lands in queſtion, appears to have been judiciouſly arranged, and carried into execution with a ſteadineſs that ſeldom fails to inſure complete ſucceſs, in the moſt difficult undertakings.]

FOR THE FARMER'S MAGAZINE.

Account of the Drainage of the Lochs at Leuchars and Cotts, in the County of Moray.

THE lochs of Leuchars and Cotts, divided by a narrow peninſula, are ſituated in the pariſh of Urquhart and county of Moray. Leuchars loch contains 40 acres under water, including a ſmall iſland, with a few acres round its banks, beſides 50 acres occaſionally flooded, and in a ſuch precarious ſtate, that all attempts to crop it had been abandoned for years paſt.

Cotts Loch contains 75 acres under water, and 20 acres occaſionally flooded.

The greater part of Leuchars Loch belonged to the Inneſes of Leuchars, Cotts to the Inneſes of Innes; and, while thus poſſeſſed, many unſucceſsful attempts to drain both, by canals, to the river Loſſie, ſeem to have been made. This river runs within a few hundred yards of Leuchars Loch; and, had

the levels been properly carried up (which ſeems never to have been done), the beſt ground in both lochs might have been tolerably well drained, provided the river had always kept ſufficiently low; but a very ordinary fall of rain raiſes it far beyond its natural bounds; and the immediate conſequence of ſuch floods, was, the ſpeat-water flowing into thoſe lochs, by the canal, and covering the adjacent meadows. This, to be ſure, might have been, and was, of late, prevented, by a ſluice on the canal, which ſhut out Loſſie; but ſtill, the ſame ſort of weather which occaſioned a flood in the river, had a ſimilar effect on the burns of Innes and Longbride, which run through the lochs; and they having no outlet while Loſſie remained high (which was often three days on end), increaſed to a degree ſufficient to cover all the adjacent low grounds.

The Earl of Fife having, many years ſince, purchaſed the Innes eſtate, and, recently, that of Leuchars, became ſole proprietor of the lochs, and land to the ſea; conſequently had it in his power to drain them, by the moſt effectual mode that could be deviſed; for, by carrying a canal direct to the ſea, the river might be avoided, and the canal ſure to run eighteen out of the twenty-four hours, in all ſorts of weather. Theſe circumſtances induced a tenant of his Lordſhip's, on an adjoining farm, to offer a per centage for money to be laid out in draining theſe lochs direct to the ſea; or, optional to his Lordſhip, he undertook to lay out the money himſelf, to the amount of 1000l. on getting his preſent farm, and others affected by the lochs, at the old, and 30l. of yearly additional rent, with the loch lands, for nineteen years, rent free. The latter propoſal was acceded to by his Lordſhip, and the operations were immediately ſet about.

The lochs contained one, two, and, where deepeſt, three and a half feet water. On taking levels from the ſea, it was found, that the ſpring-tides would run up the drain at about two thirds full. The length from the ſea to the loch mouth is 2200 running yards; and a contract was entered into for digging the canal, at 2d., and, where the ground was deepeſt, at 3d. per cubic yard. To give it a proper ſlope, the canal is, in one place, 60 feet wide at top, varying to 40, and, where loweſt, 25 feet, being uniformly 10 feet wide at bottom. The operations commenced about 1ſt January 1801; but the obſtructions were great beyond conception; for, betwixt high and low-water marks, there is blowing ſands, 300 yards wide, ſeveral feet higher than the bottom of the canal, and through which it required to come; and, as the river Loſſie alſo run on a higher level, the ſink water, conſtantly ſtanding in its bottom, was 2½ feet deep, and the influx

flux very conſiderable: The lands were often cut, but being without a conſtant run of water, filled regularly up the next or following tide: Pumps, with men and horſes, were tried, without the proper effect; and, at laſt, turf embankments were put acroſs the canal every night, as the work was finiſhed, and the ſink-water hove over next morning, by men with wooden ſcoops, before the labourers could attempt to work. At times, two men could keep the canal clear of ſink-water, by conſtant work; but ten were occaſionally requiſite; and, when the embankments burſt, owing to a quickſand bottom, and other untoward circumſtances, which was frequently the caſe, probably, when the work of the day was neareſt a cloſe, it became neceſſary to bribe all hands to aid the ſcoopers. Perſeverance, however, brought on the work; and the levels were regularly carried up, ſo as to be 16 inches under the deepeſt water; and the new cut was opened in October laſt. This Summer, labourers have been employed in cutting through the loch; and, if the weather holds good, they will, in a month hence, have got to the deepeſt of it: But ſtill, to make the water run ſufficiently low at the mouth, an embankment on each ſide the canal, through the blowing ſand, is found requiſite, to prevent the water from ſpreading, and conſequently loſing the power of forcing it out to ſea: A temporary embankment of bruſhwood was tried, to prove the practicability of the ſcheme, and found to anſwer effectually; now a durable one of ſtones, about the ſize of road metal, is nearly finiſhed. Three ſtone bridges, of one arch each, acroſs the canal, have alſo been built; and, on the lower, there is a ſluice, which opens and ſhuts of itſelf, and bars out the tide.

The Loſſie, beſides coming up the old canal in ſpeats, often breaks her banks in various places; and, after inundating a prodigious deal of fine corn ground, gets into the lands above mentioned; to prevent which, as far as poſſible, the loch tenant has built about 3000 ells of flow dike, 14 feet broad at bottom, 18 inches at top, and 4½ feet high, at 150l. expence; and ſtill it is ſomewhat doubtful, whether a proper dike, on the banks of the new river, at a few hundred pounds coſt, would not more effectually ſecure the lands within her reach, and increaſe their value conſiderably. The writer of this has only further to add, that two thirds of the ſoil, in and about theſe lochs, is a rich loam, capable of producing oats and wheat in abundance. Of the former, there are upwards of 60 acres this year ſown, which promiſe well. Next ſeaſon, the breadth of oats will be increaſed, and 20 acres fallowed for wheat.

28*th Auguſt* 1802. W.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Management of Turnips.

GENTLEMEN,

At page 482, Vol. II. your correſpondent at Ripon ſays, that the farmers, in moſt parts of Yorkſhire, cultivate their turnips in rows (upon a flat ſurface), at intervals of about twelve inches; and that, in the turnip huſbandry, they are not inferior to the farmers of any country whatever. I think an inveſtigation of this matter neceſſary, not only on account of the diverſity of opinion which exiſts, relative to the beſt mode of cleaning and meliorating the ſoil, and obtaining the greateſt weight of turnip per acre, but becauſe thoſe farmers, in ſome parts of the country, who have only *heard* that drilling is a more advantageous mode of culture than the broad-caſt method, may, in conſequence of your friend's letter, adopt the Yorkſhire practice, which, I conceive, would not be ſo beneficial to them, and the community at large, as that which is purſued, to a great extent, in Northumberland, Roxburghſhire, Berwickſhire, and Eaſt-Lothian, where they are cultivated in raiſed drills, at intervals of 26 to 28 inches. I entertained hopes, that ſome of your other correſpendents would have embraced the opportunity, offered by your friend's letter, of diſcuſſing this ſubject in an ample manner; but as none of them have communicated their ſentiments upon it, *in ſo minute a way as its importance demands*, let that be my apology for troubling you with mine.

A good crop of turnips cannot be obtained, unleſs great attention and labour are beſtowed in hoeing them. As it is very difficult and expenſive to hoe broad-caſt turnips in a proper manner, and as drilling enables even children to hoe with great preciſion and regularity, I readily admit, that the Yorkſhire is preferable to the broad-caſt method; and that, with reſpect to the facility with which they are hoed, at proper and regular diſtances in *each drill*, there ſeems no very material difference between the two modes of drilling, now under conſideration. But as an acre of ground in the Yorkſhire method, contains more than twice as many drills as the ſame quantity of land under the other management, it is obvious, that, when any given ſum, ſay 4s. for example, is required to hoe an acre in the former, about half a crown will be ſufficient in the latter. Beſides, the broad intervals can eaſily be cleaned by a man with a horſe and ſcuffler, or weeding plough; whereas, the other muſt be hand-hoed, which is an operation not only more expenſive, but leſs fertilizing; for, in

in the firſt cleaning with the weeding plough, a great part of the earth on the inner ſides of two drills, or on each ſide of one drill, is, by going once along the interval, moved towards the middle of it, and, a few weeks afterwards, laid cloſe up to the turnips by a double plough, drawn by one horſe; ſo that, being thus twice ploughed, and well pulverized, it receives the benefit of a bare fallowing; and, independent of the increaſed fertility, labour is ſo materially abridged, that the farmers in ſeveral parts of the country, are enabled to manage a much greater quantity of land, in the turnip huſbandry, than could otherwiſe be done. Its effects, in the conſumption of dung, are alſo favourable to an increaſed cultivation of turnips; for that valuable article, being *all* completely covered, and confined to the roots of the plants, leſs of it is required than in the broad-caſt, or Ripon mode, in which a great proportion of it is expoſed on the ſurface of the ground, to all the injurious effects of the weather. In theſe two modes, the dung, even when applied in a proper ſtate, cannot be ſufficiently covered; but when it is rough, or half rotten, moſt of it is waſted, and, in certain ſeaſons, perhaps injurious effects reſult from its being uſed in this ſtate. To thoſe, however, who contend for the ſuperiority of half-rotted dung, the raiſed drills preſent themſelves as the moſt convenient management for covering it well; but having repeatedly tried whether the greateſt crops of turnips and corn can be raiſed with well-rotted, or half-rotted dung, and having, when all other circumſtances were ſimilar, always found the greateſt produce after the former, I cannot *yet* believe that 'half-rotted dung is beſt.' What is ſtated by your friend at Ripon, relative to moiſture and brairding, namely, *that the ſeed ſhould be committed to the ground as ſoon as poſſible after the plough, and while the moiſture is freſh*, well deſerves the attention of every cultivator of the ſoil. Owing to want of attention to this, I have, in dry ſeaſons, obſerved crops much injured, when all other parts of their management ſeemed well calculated to promote a great produce. It is, however, as eaſily accompliſhed in the turnip huſbandry of Northumberland, &c. as in that of Yorkſhire. It has been advanced againſt the raiſed drills, that, in the following Spring, the land cannot be reduced to an even ſurface, and, conſequently, that ſome parts of it become too retentive of moiſture. On tenacious lands, perhaps, this may *ſometimes* happen; but, on thoſe, a prudent farmer would cultivate turnips, which are not liable to this objection; for, by drawing them in a diagonal manner, and ploughing the ridges for the next crop, in their original direction, the plough croſſes the drills in ſuch a way as to mix a conſiderable part of the ſoil and manure in them, with the land in the intervals, which, with

the uſual harrowing, again produces an even ſurface. It is alſo contended, by the advocates for the Yorkſhire mode, that, in the broad intervals, much land remains unmanured, and unproductive. I muſt beg of them, however, to recollect, *over and above what is already ſtated, as to the next ploughing mixing the ſoil and manure*, that the lime, being applied to a flat ſurface, falls equally over the ground; and that the dung and urine of the ſheep which are folded upon the turnip, fall *moſtly* into thoſe very intervals which they ſay receive no manure; and, above all, that the *uniformly* luxuriant and productive crops of grain, which ſucceed the turnips obtained by this management, completely evince the futility of their arguments. So very great are *many* of the turnip crops, and ſo great the quantity of manure received from the ſheep while conſuming them, that, in order to prevent the ſucceeding crops of corn from lodging, and becoming uſeleſs, part of the turnips are drawn off, and then the ſheep are folded upon the ground, containing ſix drills *with*, and ſix *without* turnips, alternately; and as they (after being ſatisfied with food) go to the bare parts to reſt, theſe receive as much of the dung and urine as the other. Thoſe gentlemen ſhould alſo recollect, that, in order to bring turnips, or any other plants, to the greateſt ſize, or moſt productive ſtate poſſible, an ample paſture ſhould be allowed for their roots and tops: And, that the ſpace in the broad intervals is not *too great*, appears evident, from this circumſtance *alone*, that, in Auguſt or September (according to the time of ſowing, &c.), the tops of the turnips ſo completely overſhadow, or cover, the whole ſurface of the ground, that it is only by a near inſpection they can be diſcovered to be in rows.

I have, for many years, attentively obſerved the difference between turnips raiſed in drills, with broad intervals, and thoſe raiſed in other modes; and am convinced, that they grow to a much greater ſize in the former, than in any other method I have ſeen practiſed; and here I muſt obſerve, that I have ſeen them cultivated in the way your correſpondent recommends. But, in judging of the weight per acre, it is the opinion of many of the advocates of the Yorkſhire method, that the largeneſs of the turnips ſhould not be ſo much attended to, as the greatneſs of their number. On this point, I apprehend that ſome erroneous ideas are entertained, and ſhall therefore endeavour to inveſtigate it with ſome degree of exactneſs. Your friend ſtates the interval, in the Yorkſhire huſbandry, at *about* 12 inches. I underſtand that it is generally 13 inches; and that the diſtance between plants, in the rows, is 12 inches. An acre will, therefore, contain *about* 40,200 turnips. The ſame quantity of land, in the other method, will contain (taking the interval at 27, and the diſtance in the rows at

13

11 inches) *about* 21,100. With regard to the *real* ſize of the turnips, in the different modes of raiſing them, I have no doubt of meeting the ſupport of almoſt every man of experience, in maintaining, *when all circumſtances reſpecting ſoil, ploughing, manuring, ſeed, time of ſowing, &c. are equal*, that, when thoſe in the drills with ſmall intervals, grow to 6 inches diameter, thoſe in the drills with broad intervals, will grow to $8\frac{1}{2}$ inches, *upon an average*. Now, as ſimilar ſolids are in the triplicate *ratio*, the weights of the turnips will be as the cubes of their diameters, or as 216 is to 614; *which experiments in weighing will prove* *. So that the weight of the 40,200 will be to that of the 21,100 turnips, as 86 to 129 nearly; and conſequently, when the latter are worth 6l., the other will be worth only 4l. 5d. per acre.

It will, perhaps, be urged by ſome, that I have conſidered the turnips in the Yorkſhire mode ſmaller, and thoſe in the North-country mode larger, than they really are; but, even ſuppoſing the latter had been taken at conſiderably leſs than 8 inches diameter, the 21,100 would have outweighed the 40,200, by about one eighth part, which is equal to fifteen ſhillings an acre. I dare venture to aſſert, however, that the reſults of properly conducted experiments, will prove that I am right in taking the proportions, upon which I firſt calculated. The inference, then, from this inveſtigation is, that, beſides the ſaving of expence, and the other important advantages pointed out, the mode of cultivation, which is purſued in the counties of Northumberland, Roxburgh, Berwick, and Eaſt-Lothian, raiſes a weight of turnip per acre, greater by about one third, than that purſued in Yorkſhire. When we conſider the immenſe numbers of cattle and ſheep which are ſupported by our turnip crops, the great quantity of excellent manure which is raiſed from theſe animals, the rich crops of corn, &c. which are produced by this manure, and *their* effects on ſucceeding dunghills, we readily perceive how juſtly the cultivation of turnips is reckoned a moſt powerful means of improving and enriching a country; and that the univerſal adoption of the former, in preference to the latter mode, would rapidly increaſe the proſperity of this kingdom. I am ſincerely yours, &c.

24*th Auguſt* 1802. A NORTHUMBERLAND FARMER.

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* When the turnips are ſpherical; and the beſt kinds are nearly of this form.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Magnesia as a Manure.

GENTLEMEN,

I BEG leave to acknowledge the accuracy of your observation on magnesia, in the note, p. 24, concerning my remarks on lime.

That magnesia is poisonous to plants, is stated in some of the English agricultural essays. Last Summer, I tried this, by sowing some oats in a pot, containing one tenth part magnesia, and the rest common earth. The oats throve exceedingly well.

In another pot, containing magnesia alone, oats would not vegetate; which was only what might have been expected.

You say, moreover, that magnesia put on ground, in which sorrel naturally grows, will root out that plant; but you do not mention, whether this is an observation, derived from the nature of magnesia; or whether (as I suppose from your known correctness) from experiment. But, has not lime the same tendency as magnesia, to neutralize acids? Yet I have tried it on grounds overgrown with sorrel, and found no beneficial effect. Accurate experiment is every thing in agriculture. Theory is nothing.

A. S.

[The Report of the Committee appointed to prepare and digest a Plan of an Agricultural Society and Experimental Farm in the County of Northumberland, was lately communicated to us by a respectable correspondent, with a request that it might be inserted in our Magazine. We applaud the design, and would cheerfully have presented the whole Report, had not its length exceeded the bounds which, on ordinary occasions, we can devote to such communications. The substance is therefore extracted; but, we trust, in such a way, as will enable our readers to comprehend the nature of the proposed plan.]

FOR THE FARMER'S MAGAZINE.

Extracts from the Report of the Committee appointed to prepare and digest a Plan of an Agricultural Society and Experimental Farm in the County of Northumberland.

THE subject referred to the consideration of the Committee, naturally divides itself into two branches, namely, 1st, The nature

ture and conſtitution of Agricultural Societies; and, 2dly, The nature and conſtitution of the propoſed Agricultural Society, and the plan for conducting the Experimental Farm.

I. *Nature and Conſtitution of Agricultural Societies.*

Agricultural Societies, of various deſcriptions, have already been eſtabliſhed, not only in this, but in other countries; and though they have ſeldom anſwered the ſanguine expectations of thoſe by whom they were ſuggeſted, yet, in many reſpects, they certainly have contributed to the improvement of the art of huſbandry. Indeed, every thing that brings farmers together, that makes them better acquainted with each other, that renders agriculture more the object of attention, or that has a tendency, firſt to collect, and next to diſſeminate, uſeful information, muſt ultimately be of material ſervice to agriculture, though the benefits reſulting therefrom may appear to be ſlow and gradual.

The general nature of the ſocieties, which have been hitherto either eſtabliſhed or propoſed, may be arranged as follows:

1ſt, Societies for collecting and circulating uſeful agricultural information, of which the Bath Society forms a reſpectable inſtance.

2dly, Societies for the purpoſes of police; as, the Worceſterſhire Road Society, the Glendale Ward Aſſociation, and the Dalkeith Farming Society for the proſecution of thieves and other depredators on the property of farmers. Theſe are found to be extremely uſeful in the diſtricts where they have been eſtabliſhed.

3dly, Societies to raiſe a fund for the benefit of the widows and orphans of farmers;—an admirable idea, as the farmer would thus be enabled to lay out more of his capital on the improvement of his land, being certain, ſhould any accident happen to himſelf, that his family would not be left unprovided for.

4thly, Societies for granting premiums; as, the Durham, the Manchester, the Devonſhire, and many others that might be mentioned. Theſe have been of great ſervice in various inſtances, but are liable to much abuſe.—If a premium be given for the beſt ſtock, only a few individuals, who have paid particular attention to that department, can ſtand the competition; if, for the largeſt crops, thoſe who are poſſeſſed of the richeſt fields can hardly fail of ſucceſs. Premiums may be of uſe in promoting the introduction of articles, the culture of which is unknown; but the amount is, in general, too ſmall to encourage any great exertion.

Laſtly,

Laſtly, Societies may be conſtituted for the purpoſe of trying experiments, like the Britiſh Wool Society, who have an experimental ſtock, to aſcertain the moſt likely means of promoting the improvement of Britiſh Wool.

II. *Nature and Conſtitution of the propoſed Agricultural Society and Experimental Farm.*

The propoſed inſtitution, it is to be hoped, will not confine itſelf to a ſingle point, however important, but will take into its view all the moſt important particulars, entitled to the huſbandman's attention.

The leading objects which the experienced farmer will naturally pay attention to, are the following:

1ſt, What is the beſt moſte of cultivating arable land?

2d, What is the beſt ſyſtem for the management of graſs land?

3d, What are the moſt uſeful implements of huſbandry?

4th, What are the moſt profitable breeds of animals?

5th, What is the beſt plan for rendering waſte or barren land productive?

The general ſyſtem of cultivating arable land, has already been brought to greater perfection than any other branch of huſbandry, with one exception, that it is not yet aſcertained, how naked fallows on ſtrong land can beſt be aboliſhed; an object of incredible importance to this kingdom, where there are from two to three millions of acres, every year, kept in that unproductive ſtate. Various experiments, of conſiderable importance, remain to be tried, regarding the different kinds of grain, the beſt mode of ſemination, the moſt valuable manures, &c.

It is certain, that England borrowed from Flanders a great proportion of its arable ſyſtem; as, the culture of turnips, the Norfolk rotation of crops, as it is called, &c.; but in regard to the management of graſs land, it is entitled to a decided preeminence. The meadows are no where finer, nor the paſtures more productive; and nothing can ſurpaſs the produce of the water meadows, in thoſe parts of the kingdom where that valuable improvement is practiſed.

It can hardly be queſtioned, that the implements of huſbandry have been brought to greater perfection here, than in any other country. The natural genius of the natives of this iſland for machinery, which has been ſo conſpicuouſly diſplayed in various arts and manufactures, could not fail to ſucceed, when directed to agricultural improvements. When we read, that, in other countries, they can find no better mode of ſeparating the grain from the ſtraw, than by treading with the feet of oxen, who will

will not be pleaſed and aſtoniſhed, at the celerity and perfection with which it is effected by a Britiſh thraſhing machine? Many improvements, however, may ſtill be effected in this branch of huſbandry; and various implements, as, the different kinds of ploughs, harrows, ſcythes, &c. ought to be compared together.

The important object of improving waſtes, has been particularly attended to in Great Britain; and the beſt ſyſtem for adding to the land in cultivation, is eſſential in every country where waſtes abound, and an increaſe of population may be looked for. There remains, however, various experiments to be made, which (under the direction of an intelligent ſociety) may ſoon be effected.

The great point, however, is to have all theſe objects united under one ſyſtem of management; and in that fortunate union conſiſts the ſuperiority of Britiſh huſbandry; for, in other countries, they have, in general, ſucceeded only in one department.

In that reſpect, it is to be hoped, that the Experimental Farm will prove a pattern to every other, by aſcertaining the advantage of all the various branches of huſbandry.

Having premiſed theſe general obſervations, the Committee will now proceed to ſubmit to the conſideration of the County, what has occurred to them reſpecting the nature and conſtitution of the propoſed Society.

The Society, they beg leave to ſuggeſt, ſhall be—For the purpoſes of uniting, under one ſyſtem of management, all the various branches of huſbandry; and for endeavouring to aſcertain the principles on which they ought to be reſpectively conducted.

With that view, it is propoſed that the Society ſhall take a farm of from 220 to 440 acres of arable land, and from 50 to 300 acres of waſte land, according to the amount of the ſubſcriptions, on which to try the various neceſſary experiments.

The Society to conſiſt of a Preſident, four Vice-Preſidents, a Committee of Management, to be reſtricted to Members, a Committee of Accounts, a Treaſurer, and an indefinite number of ordinary Members.

The ordinary Members to be divided into two claſſes:

1ſt, Thoſe who contribute to the purchaſe of the original ſtock requiſite for the farm.

2dly, Thoſe who ſubſcribe to defray the annual expence.

It appears that the fund neceſſary for purchaſing the original ſtock, and defraying the firſt year's expences, and various incidental charges, will amount to the ſum of from 2000l. to 3500l., according to the ſize of the Farm.

To

To defray the charges attending the various experiments to be tried, will require a ſubſcription of from 200l. to 300l. *per annum*. The expence of making accurate experiments muſt be great, from the number of ſervants that are neceſſary, &c. &c.

It is propoſed that the Manager, who ſhall alſo act as Secretary, ſhall be appointed by the Subſcribers to the original Fund; and that the Committee of Management ſhall be elected both by the Annual Subſcribers and the Joint Stock Company.

As the whole ſucceſs of the plan muſt depend on the choice of the Manager, too much attention cannot be paid to this important particular. Your Committee are of opinion, that he ought to be one acquainted both with the theory and the practice of agriculture, who will dedicate his whole attention to that object alone, and will give up every other purſuit. If poſſible, he ought to be one who has already been employed in conducting agricultural experiments, and who is likely to carry on that important branch of the buſineſs with almoſt mathematical diſtinctneſs and preciſion.

It is further propoſed, that a farm for this purpoſe ſhall be taken for at leaſt a term of fourteen years, at the expiration of which, any two or more of the joint ſtock ſubſcribers may either call up their ſhare of the fund, or any of the annual ſubſcribers may withdraw their ſubſcriptions.

The joint ſtock ſubſcribers may, at any time, transfer their ſhare or ſhares, proper notice being given to the Committee, of ſuch transfer.

If theſe general outlines be approved, it will not be difficult to arrange the minuter regulations, which in general, it may be obſerved, ought to be as few and ſimple as poſſible.

III. *Plan for carrying on the Experimental Farm.*

This part of the ſubject naturally divides itſelf into the following branches: 1ſt, Implements of huſbandry; 2d, Live ſtock; 3d, Arrangement of crops; 4th, Annual expence; 5th, Annual produce; 6th, Capital ſtock; 7th, Waſte land department.

In order that the ſubject may be more fully brought under the conſideration of the county, the Committee has drawn up two calculations, one for a farm of 220 acres of arable land, where 2000l. capital will be neceſſary; and another of 440 acres, which will require about 3500l. The one on the ſmall ſcale may do; but the other, if the ſubſcriptions reach to that amount, would, in every reſpect, be infinitely preferable.

1. *In-*

1. *Implements.*

	Farm of 220 Acres. £.	s.	Farm of 440 Acres. £	s.
The expence under this head may be eſtimated at - - - - -	310	0	420	0

2. *Live Stock.*

Five different breeds to be tried, viz. 1ſt, The ſhort-horned; 2d, The long-horned; 3d, The Devonſhire; 4th, The Galloway; 5. The Kyloe, or Highland Scots.—In the progreſs of the farm, the Hereford, the Suſſex, the Suffolk, tne Alderney, the Ayrſhire, and other breeds, may alſo be tried. On the farm of 220 acres, the comparative merit of the different breeds to be aſcertained, by comparing the feeding quality of two of the beſt oxen of each kind that can be procured. On the larger farm, the experiment may be extended to the dairy.

The Cheviot and Heath ſheep to be bred on the moor farm, and brought, at three years old, to fatten on the low farm, to aſcertain which are the quickeſt feeders.

The ſum required to purchaſe live ſtock may be eſtimated at 480l. on the ſmall farm, and 960l. on the large one.

3. *Arrangement of Crops.*

The following arrangement of crops is ſubmitted to the conſideration of the friends to the propoſed inſtitution.

	Farm of 220 Acres.	Farm of 440 Acres.
To be kept in old graſs - -	25	50
Lucern and ſainfoin - -	10	20
Water meadow - - -	5	10
	40	80
Remains for cultivation - -	180	360
	220	440

It is propoſed that the land to be cultivated ſhall be principally kept under a rotation of three years tillage, and one, two, or more years graſs, according to circumſtances.—The following calculations were made on the ſuppoſition that the average continuance in graſs may be three years.

Then

	Farm of 220 Acres.	Farm of 440 Acres.
Then there will be under fallow crops -	30	60
And under crops of grain - - - -	60	120
	90	180

State of the Farm of 220 *Acres for one year.*

	Acres.
Old graſs - - - - - - - - -	25
Lucern and ſainfoin - - - - -	10
Water meadow - - - - - - -	5
Fallow crops - - - - - - -	30
Wheat and barley ſucceeding the fallow crops - -	30
Firſt year's crops of the various graſſes - -	30
Second ditto - - - - - - - -	30
Third ditto - - - - - - - -	30
Oats and other kinds of grain ſucceeding the graſs -	30
	220

4. *Annual Expence.*

	Farm of 220 Acres. £.	Farm of 440 Acres. £.
Rent and taxes - - - - - -	220	440
Lime and other manure - - - -	30	60
Seed - - - - - - - -	60	120
Manager - - - - - - -	100	150
Servants and labourers - - - -	220	400
Corn for horſes, 400 buſhels - - -	40	80
Smith, carpenter, ſaddler, and other tradeſmens bills - - - - - -	40	80
	710	1330

5. *Annual Produce.*

	£.		
Fallow crops - - - - -	117		
Crops ſucceeding the fallow crops -	185		
Ditto — the clover and graſſes	115		
Produce of graſs lands, after deducting what is neceſſary for the draught horſes	150	567	1134
Annual deficiency -		143	196

6. *Ca-*

6. Capital neceſſary for firſt Stocking, &c.

	£.	£.
Implements - - - - - - -	310	420
Live ſtock - - - - - - -	480	960
Firſt year's rent, and expences - - -	710	1330
Draining, encloſing, building, houſehold furniture, and other incidental expences	500	790
	2000	3500

7. The Waſte Land Department.

If this be reſtricted to 50 acres near the principal farm, the experiments for improving barren land, may be tried without much additional expence, ſeed and manure excepted, which may be included under the head of Incidents.

The various experiments to be tried with the waſte land, may be as follows:—

1ſt, Liming the ſurface.
2d, Ploughing merely, and ſowing with graſs-ſeeds.
3d, Ploughing and liming.
4th, Paring, burning, and ploughing.
5th, Paring, burning, ploughing, and liming.
6th, Paring, burning, ploughing, liming, dunging, or marling.
7th, Experiments with turnips, rape, oats, rye, &c.

Such are the outlines of the plan which the Commitee beg leave to ſubmit to the conſideration of the County of Northumberland.

The advantage of eſtabliſhing an Experimental Farm on a great ſcale, and uniting all the various branches of huſbandry, can hardly be queſtioned; and the Committee ſhall be proud to ſee the firſt example of ſuch an inſtitution reſerved for the valuable province for which this paper is drawn up.

Before concluding this Report, the Committee beg leave to ſubmit the following obſervations, reſpecting the expediency of reſolving to carry the preceding plan into immediate execution, if, after being thoroughly weighed, improved upon, and corrected, it ſhould be fortunate enough to meet the approbation of the County of Northumberland.

There are many advantages in its favour, at preſent, which cannot always be depended upon. Not only ſeveral of the greateſt proprietors in the county, but alſo many of the moſt intelligent

intelligent farmers in it, whoſe aſſiſtance is ſo particularly material, have come forward with a degree of liberality and ſpirit which does them infinite credit. If once, however, that zeal be ſuffered to fall off, it is impoſſible to ſay, whether it can be again revived to equal advantage.

2d, The burdens to which landed proprietors are now ſubject, render it indiſpenſably neceſſary that they ſhould promote the improvement of their property as much as poſſible, by bringing the knowledge of Agriculture to perfection: Much improvement may be effected in a ſhort ſpace of time; in conſequence of which, both the farmer and the landlord, in proportion to their reſpective intereſts, muſt be benefited.

3d, Nothing but agricultural improvements can enable Great Britain to ſurmount its preſent difficulties. The effects of the ſcarcity lately experienced, are hardly yet ſurmounted; and were another to take place ſoon, to the ſame extent, (which, without agricultural improvements, may be the caſe), it is impoſſible to anſwer for the conſequences. Whereas, did we make the moſt of our ſoil, we might enrich ourſelves by exporting the ſurplus of our agricultural productions, the moſt beneficial ſource that it is poſſible for a nation of commercial opulence to poſſeſs!

FOR THE FARMER'S MAGAZINE.

Strictures on Farm-Management near London.

LETTER XI.

(Continued from p. 345.)

In every large corn farm, there ought to be a machine for thraſhing out the grain, and cleaning it out for market. Experience, both in the ſouth-eaſt diſtricts of Scotland, and in many parts of England, has completely proved the advantages of this machine to be very great. It gives out a much greater produce of grain, than can poſſibly be got by the flail, and at a much leſs expence; inſomuch, that it is now a very univerſally received opinion, that a well-conſtructed machine, even where driven by horſes, ſaves its own coſt in three years. A proper machine thraſhes out the grain, ſeparates it effectually from the ſtraw, divides the chaff, the light grain, and the heavy corn, all at one operation: and nothing farther is neceſſary, except to riddle the grain, and meaſure it up for market.

Beſides,

Beſides, by means of a thraſhing machine, the huſbandman is, in a great meaſure, ſecured againſt every chance of having his grain ſtolen by his ſervants. He appoints a day for thraſhing out a rick, and the whole is completed, meaſured out, and locked up in his granary, before night. With a thraſhing machine, the barn becomes only a receptacle for the ſtraw, to preſerve it, until wanted, for litter or fodder. Thus, combined with the frames recommended for the ricks, and the ſecure granary which you already have, every particle of grain harveſted is brought to profit; and nothing ſuffers, except the mice and rats. I ſhould likewiſe have excepted the poultry and pigs in the fold-yard; ſince, where thraſhing machines are eſtabliſhed, both of theſe fare very ill. For the poultry, there is, however, abundance of light corn; and it is certainly better, that both theſe and the pigs ſhould have known quantities of grain dealt out to them, than that they ſhould be feeding, at random, on the waſte produced by careleſs or diſhoneſt ſervants.

Where a ſtream of water can be procured at a moderate expence, the beſt poſſible thraſhing-mill is, one conſtructed with a water-wheel; and a very ſmall ſtream is ſufficient for the purpoſe, eſpecially if it admits of being gathered into a head during dry weather. When water cannot be conveniently had for this purpoſe, a wind-mill is the next beſt. Either of theſe, certainly, add conſiderably to the firſt coſt of a thraſhing machine; but ſaves a great deal, in the long-run, of horſe labour.

Were I poſſeſſed of a conſiderable grain farm, or occupying one on a long leaſe, I would, unqueſtionably, have a powerful thraſhing machine, to go by wind or water. In either caſe, I ſhould likewiſe add to the machinery a ſtraw-cutter, to chop down the whole fodder uſed in the farm into chaff, and a mill for breaking all the beans or grain given to the horſes, cattle, and pigs. If ſituation and circumſtances admitted of it, I would likewiſe have machinery added for grinding wheat or other grain; and thus combine the buſineſs and profits of a miller, with thoſe of the farmer.

The clumſy contrivance, which is practiſed in your country, for cleaning or winnowing the grain, by heaving it from one part of the barn to another, is highly ridiculous. There is not now a farmer of twenty acres of arable ground in Scotland, or the North of England, who has not a machine-fan, or *fanners*, as they are called. Yet, the clergyman is ſcarcely ten years dead, who uſed to preach vehemently againſt their uſe,

when firſt introduced, as impiouſly uſurping the province of the Almighty, by pretending to create his *weſt* wind.

Before the introduction of the fanners, the Scotiſh farmers, as I have ſeen practiſed in the ſouth of England, waited for a weſt wind, and winnowed their grain, by ſhaking it to the wind, between the barn doors. In uſing the fanners, ſome experience is neceſſary for regulating the different parts of this very ſimple machine, and for giving it more or leſs wind, according to circumſtances. The grain is firſt put through, with a light wind, to ſeparate the chaff. It is afterwards put through, once, or oftener, as neceſſary, to ſeparate the good grain from the bad. The grain is riddled each time, to ſeparate unthraſhed heads, and chaffy grains. Theſe are thraſhed over again, and then winnowed.

With a good thraſhing machine, theſe unthraſhed heads, and chaffy grains, which are here called *caps* and *cloaks*, are extremely rare. Another very great advantage of the thraſhing machine is, that the huſbandman can take advantage of high prices, by thraſhing out his grain quickly; and, in bad harveſt weather, can thraſh out ſuch as is in danger of being ſpoilt, either in the field or the rick-yard. A good and powerful machine, will thraſh out, and clean completely for market, from thirty to fifty Wincheſter buſhels of grain in an hour. The labour of carrying the ſheaves to the mill, is the ſame as carrying them to the barn. One perſon feeds the machine; and three, or, at moſt, four below, remove the ſtraw, as it accumulates, to the far end of the barn, riddle the grain, and meaſure it into ſacks. Altogether, ſeven or eight perſons may be neceſſary for the whole of the operations.

To give you an idea of the ſaving by a thraſhing-mill, I ſhall ſuppoſe it to thraſh out a rick of wheat, containing two hundred buſhels, in one day; and that all the other hand-labour, except thraſhing, comes to the ſame expence in both. We pay, in this country, one twenty-fifth part of the clear grain to the thraſher, which is called his *lot*: This comes to eight buſhels: And if we add, to that, 5 *per cent.* for waſte, from bad thraſhing, pilfering, and vermin, which is certainly within the truth, we ſhall thus have a ſaving of eighteen buſhels of marketable grain in each rick. This, at the preſent high price, amounts to eight or nine pounds Sterling for the work of a ſingle day. If the machine is driven by horſes, there is ſome deduction to be made on account of their labour. Suppoſing a large farm, including all kinds of grains, to average thirty ſuch ricks; the ſaving on one crop, by the thraſhing machine, will exceed two hundred pounds,

pounds, at the preſent prices; and, even at moderate ones, will amount to one half of that ſum.

I am yours, &c.

R r r.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Drainage.

GENTLEMEN,

I HAVE obſerved a ſhort letter, in your November Magazine, recommending Mr Elkington's mode of draining; but I am ſorry to ſee that no account of that method, nor of the ſucceſſes attending it, have yet been given by you.

The following fact hath recently come to my knowledge, from a gentleman who lately viſited that part of the country where Mr Elkington reſides, relative to a very ſucceſsful improvement made by him on a bog near Newcaſtle-under-Line in Staffordſhire, which, I think, might be an inducement to trials of the like nature in this country, where there are many extenſive tracts of the ſame kind, equally capable of cultivation.

About eight years ago, Mr Elkington obſerved a farm of about ſix hundred acres belonging to Mr Crewe, M. P. for Cheſhire, which yielded almoſt no rent, the greateſt part of it being a perfect moraſs, inacceſſible to cattle.

Mr Crewe, dreading the expence of draining this bog, offered Mr Elkington a leaſe of it, at 1s. per acre, for fifty years, provided he would drain it at his own expence. This he hath now done; and the greater part of it is in ſuch excellent cultivation, as to be worth forty ſhillings per acre. It hath, I am told, attracted very general attention, and the fame of it hath occaſioned Mr Elkington to be called to Ireland, where he now is giving directions for the drainage of an extenſive bog there.

It is matter of regret, that a ſyſtem is ſo ſlowly introduced into Scotland, by which wet lands may be improved with ſo much leſs difficulty and expence than formerly.

7*th May* 1802. S. A.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Management of Potatoes.

GENTLEMEN,

THE importance of every thing that may tend to improvement in the culture of potatoes, emboldens me to trouble you with a few remarks on P. H.'s intelligent paper in your laſt Number.

That gentleman's theory of the curl implies, that this diſeaſe ariſes from the potato apples being fully ripened; or, according to his own words, 'from the ſeminal juices being transferred from the root to the apple, in bringing the ſeeds to complete maturity.' But I think this theory is refuted, by what he himſelf relates, when he ſays that the potato plant was introduced from a climate much warmer than ours; of courſe, from a country where its ſeeds are much better ripened than here. Yet he does not allege that potatoes, in their native climate, are not propagated by the roots as here, or that they are there more ſubject to the curl. I am alſo informed of a certain perſon having, upon belief of this ſort of theory, taken up his potatoes before they were fully ripened, expecting they would, as ſeed, produce uncurled potatoes; but found he was miſtaken.

The analogy of the red clover to this caſe, appears to me very diſtant; for it has no tubercles that produce a ſucceſſion of plants. All biennial plants, by a particular effort of nature, preſerve themſelves, I believe, for three, or even four years, if they are not permitted to produce their ſeeds. Your correſpondent C. G. I apprehend, is miſtaken, when he ſays that preſerving potatoes in pits is not a good method, becauſe the damp tends to make them ſhoot. He alleges that an earthen houſe preſerves them beſt; becauſe it is the warmeſt of all buildings in Winter. Now, I remark, it requires heat alone to make potatoes ſhoot in Spring. They have, in the drieſt ſituations, enough of internal ſap to evolve the bud. Nevertheleſs, the greateſt care is neceſſary in forming and covering the pits, to preſerve the potatoes placed in them from wetneſs. I believe both ways are very good, when carefully managed; for I have tried them both, with ſucceſs.

A. S.

[It

[It is with much ſatisfaction that we lay before our readers a correct ſketch of the ſpeech of Charles Taylor Eſq. ſecretary to the Society of Arts, &c. at the annual meeting May 25th laſt, ſo far as reſpects Agriculture, Chemiſtry, and Mechanics; and we take this opportunity of acknowledging our obligations to that gentleman, not only for his polite conduct on this occaſion, but likewiſe for the ardent ſupport he has given this Magazine.]

FOR THE FARMER'S MAGAZINE.

Sketch of the Speech of Charles Taylor Eſq. Secretary to the Society of Arts, &c. at the Annual Meeting, May 25th 1802.

It ſhall be my preſent endeavour to ſtate to this very reſpectable meeting, the general objects of this Society, and the great ſucceſs which has attended the exertions of its members. It is not poſſible for me to diſplay the merit of the founders and ſupporters of this inſtitution in the manner they deſerve; but my efforts in the attempt will, I hope, meet with your candour and indulgence.

The more conſideration that is given by you to the nature of this inſtitution, the more ſtrongly its importance will be impreſſed upon your minds.

During a term of near half a century, in the departments of Agriculture, Chemiſtry, Dyeing and Mineralogy, Polite and Liberal Arts, Manufactures, Mechanics, Britiſh Colonies and Trade, a ſeries of innumerable improvements have been furniſhed to the world from this Society; and, like the native oak which forms the bulwark of our happy iſland, this Society, amidſt the ſtorms of war, which have ſubverted other bodies of illuſtrious characters, ſtands firm, flouriſhing, unſhaken and permanent.

It is an encouraging ſtimulus to the human mind to reflect, that efforts, apparently feeble at their commencement, may, by a continued energy, promote objects of the firſt magnitude. Our Society is a ſtriking inſtance of this nature; as, in the year 1754, a meeting of *eight perſons*, at a coffee-houſe in Covent Garden, gave riſe to this noble inſtitution. Amidſt theſe perſons, Mr

William Shipley, a gentleman of ſmall fortune, but endowed, by nature, with good ſenſe, and great ſtrength of mind, diſtinguiſhed himſelf ſo much in promoting the intereſts of the Society in its infant ſtate, that in the year 1758, their firſt gold medal was preſented to him, with this memorable inſcription, '*To Mr William Shipley, whoſe public ſpirit gave riſe to the Society.*' The title then adopted by the members, was that of '*The Society inſtituted at London for the encouragement of Arts, Manufactures, and Commerce;*' a title which impreſſes ſtrongly upon the mind the nature and objects of the Inſtitution, and on which is formed the baſis of the preſent extenſive eſtabliſhment.

It would be an impracticable attempt to commemorate the induſtry, exertions, and abilities of thoſe worthy members, who have contributed to give the Society that conſequence which it holds in the rank of ſocieties eſtabliſhed in different parts of the world, for the benefit and improvement of mankind; but it may be proper to ſhew the nature of its laws and regulations, and to evince, that the rules and orders thereof are founded upon the moſt liberal and diſintereſted principles.

The principal officers conſiſt of one Preſident, twelve Vice-Preſidents, and eighteen Chairmen, for the nine different Committees under whoſe immediate inſpection the buſineſs of the Society is conducted. It is the particular province of theſe Officers to preſerve that order and dignity which is neceſſary in the meetings and deliberations of all public bodies; but it ſhould be well remembered, that every Meeting or Committee is open to each individual member, and every perſon has a right to give his free ſentiments upon the ſubjects under diſcuſſion, both at the public meetings and committees. Whatever buſineſs is brought forward, is firſt made known at the Wedneſday Evening Meetings, and thence referred to the Committee to which it is ſuppoſed more peculiarly to belong. After a ſubſequent conſideration at ſuch Committee, their report and opinion upon it is returned to the Weekly Meeting of the Society, and, having been noticed in two ſuch Weekly Meetings, it is either confirmed or rejected. By this regular mode of proceeding, it is ſcarcely poſſible that impoſitions can be practiſed by men of any rank, or that the claims of men of merit, however humble their condition, ſhall not meet with due attention.

I have ſlightly noticed ſome of the objects which engage the views of the Society, and have obſerved, that the buſineſs thereof is uſually divided into departments, forming nine Committees undermentioned, viz.

1*ſt*, Committee *of accounts*, who attend to the pecuniary concerns of the Society.

2*d*,

2*d*, *Of Correſpondence and Papers*, who ſuperintend the writings and publications.

3*d*, *Of Agriculture*, who inſpect the claims for planting, gardening, and culture of land.

4*th*, *Of Chemiſtry*, who conſider the various matters relative to this art, as well as dyes and minerals.

5*th*, *Of Polite and Liberal Arts*, who examine the claims in Drawing, Painting, Sculpture, and other ſimilar arts.

6*th*, *Of Manufactures*, whoſe principal object is to encourage and bring forward new materials for clothing, and to direct ſuch articles as depend upon a combination of chemiſtry and mechanics.

7*th*, *Of Mechanics*, who conſider the proper connexions and applications of what are called mechanical powers, and the conſtruction of all machines employed in arts and manufactures.

8*th*, *Of Colonies and Trade*, who manage all affairs relative to foreign commerce, and particularly ſuch matters as tend to connect more firmly the commercial intereſts of this empire, and its colonies.

9*th*, *Of Miſcellaneous Matters*, under whoſe department the election of the Officers of the Society, and the management of the models, machines, and matters belonging to the Houſe, are more particularly placed.

I might expatiate, with great propriety, on the time, pains, attention and care which have been beſtowed by the chairmen and members of the ſeveral meetings and committees above mentioned, in the furtherance of the views of the Society and the public: But I know that men of ſuch real worth ſeek not for public acclamations; the ſilent, but certain pleaſure attending good actions, ſpeaks home to the heart, and compenſates every toil.

From the firſt eſtabliſhment of this Society, all poſſible encouragement has been given by it to every branch of Agriculture; perhaps no object can be of greater conſequence to the intereſts of a kingdom. To provide food for the poor, to furniſh luxuries to the rich, to gladden the eye with ſcenery, to contribute to the national power and ſucceſs, and to bring within our reach the choiceſt products of foreign climes; the means for all theſe purpoſes are furniſhed us by agriculture. Long, very long, I hope, agriculture will not only meet with the attention of this Society; but its intereſts be warmly eſpouſed by the whole nation.

As the firſt ſpring deſcending from the hills, is, in gradual courſe, joined by other ſtreams, which form, in time, one noble torrent; in ſimilar manner, this Society firſt formed the ſpring

of Agriculture. Provincial ſocieties, afterwards, poured in additional ſtreams, and now contribute, with the late eſtabliſhment of the Board of Agriculture, to form one grand current of national wealth and power.

When I notice to you the particular premiums adjudged in agriculture, you will obſerve, that this Society has not been deficient, during the preſent ſeſſion, in contributing its proportion of encouragement and information to the national ſtock. The firſt inſtance I ſhall produce to you, is that of John Hunter Eſq. of Gubbins, who, after completing a variety of improvements in Agriculture, planted 40,000 oak trees, expreſſing, at the ſame time, this noble ſentiment, 'I have long employed myſelf with ſuch rural improvements, as have produced me an immediate advantage; I will now leave a legacy which ſhall be a benefit to my country.' Theſe trees are now in a flouriſhing condition; and the Society have adjudged to Mr Hunter a gold medal.

In the laſt year, Thomas Johnes Eſquire of Hafod, in Cardiganſhire, received a gold medal for his extenſive and very beautiful plantations of timber trees, which have been the admiration and aſtoniſhment of every perſon who has viſited that neighbourhood. He has ſince made an addition of upwards of 400,000 foreſt trees, for which another gold medal has, this ſeſſion, been adjudged to him; and I am told, that he is continuing his improvements with his uſual vigour and attention.

John Chriſtian Curwin Eſq. will receive this year a premium of a gold medal for 84,900 larch-trees, which he has planted, and which are likely to form valuable timber.

Henry Vernon Eſquire of Hilton-park, in Staffordſhire, has made an addition of 10,000 ſilver firs to his elegant plantations, for which he is adjudged a gold medal.

James Beech Eſquire of Shaw, near Cheadle, in Staffordſhire, has planted a conſiderable number of oaks, ſycamores, aſhes, elms, and beeches; for which the Society have voted him their ſilver medal.

The Reverend Richard Yates, of Chelſea, has furniſhed the Society with an ingenious eſſay on the culture of oaks; and, from various facts quoted, has ſhown, that this valuable tree, may, by proper management, produce excellent timber in a much ſhorter period of time than has been uſually ſuppoſed. It is hoped, that this important information may meet with due attention, and tend to promote an increaſe of this article, ſince its ſuppoſed ſlowneſs of growth, has hitherto greatly prevented the culture thereof. The Society have honoured him with their ſilver medal for his communication.

Charles Gibſon Eſq; near Lancaſter, amongſt other trees, has planted 6,000 elms; and I have been informed by the Biſhop of Landaff,

Landaff, who has lately viſited that neighbourhood, that Mr Gibſon's plantations, in general, are in a very thriving and flouriſhing ſtate. The Society have voted him their ſilver medal.

To William Fairman Eſquire, the public are indebted for an eſſay and account of his method of extreme branch-grafting on ſtandard trees; a mode valuable in itſelf, but peculiarly ſo, in ſuch caſes where it is neceſſary to preſerve the beauty of an orchard, and the trees of an equal ſize. The experiments made by him, and confirmed by our worthy Vice-Preſident T. S. Dyot Buchnall Eſquire, well known for his aſſiduous application as an orchardiſt, tend to throw much light on the ſubject of orchards, and fruit in general.

Robert Brown Eſquire, Markle, near Haddington, Scotland, by producing a crop of beans on 95 acres, and ſowing the land with wheat in the ſame year, has proved, that by obſerving a judicious rotation of crops, the common plan of fallowing land may be rendered, in a great meaſure, unneceſſary. The ſilver medal has been adjudged to him for his communications on this ſubject.

Mr Frederick Clifford Cherry of Stoke d'Aubenton, in Surrey, has eſtabliſhed a plantation of oſiers, to the extent of ſixty acres; for which the Society have adjudged to him their gold medal, or a pecuniary reward of thirty guineas, at his option. He has preferred the pecuniary reward, which will be beſtowed upon him.

To Mr Sith Bull, the ſilver medal, or ten guineas, at his option, has been awarded, by the Society, for eight acres planted with oſiers. He has deſired to have the money, which will, of courſe, be paid him.

The accounts and papers received from the gentlemen to whom the different premiums have been adjudged, will be inſerted at length in the 20th volume of the Tranſactions of the Society, now preparing for the preſs. The ſundry premiums and bounties, voted in the claſs of Agriculture, will now be conferred upon the candidates in the order I have noticed them.

The rewards in Agriculture having been now completed, I ſhall next proceed to the ſubject of Chemiſtry, which, at the formation of the Society, was a primary object of their conſideration.

It would treſpaſs upon your time, to enter into a minute account of the particular matters for which, in this claſs, the Society have given premiums; but, I think it neceſſary to ſtate, that the manufacturers of leather, of pottery, of varniſhes, of enamels, of white lead, of ſaline ſubſtances, and preparers of many other articles uſed by phyſicians and chemiſts, have received great benefit

benefit from the communications of the Society, and the premiums given by them.

In the preſent ſeſſion, a very ingenious chemiſt, Mr Thomas Willis of Lime Street, has produced a preparation, of a gummy matter, from the bulbs of the hyacinthus non ſcriptus, or common blue bell of the fields and woods. The dried bulbs of this plant yield a ſubſtance poſſeſſing many of the properties of gum-arabic, and anſwering, in various branches of manufacture, the ſame purpoſes in equal quantity. The high price at which gum-arabic, and ſimilar gums, have been ſold for ſome time paſt, renders this preparation an object of eſſential conſequence, as the article is plentiful, and eaſily prepared. The Society's ſilver medal will therefore now be conferred upon him, with the following inſcription:

"To THOMAS WILLIS Eſq.
For Gum from the Hyacinthus non ſcriptus."

The next claſs, comprehending Mechanics, has ever met with very minute attention from this Society. I have before obſerved, that, in agriculture and polite arts, this Society led the way to particular national eſtabliſhments for thoſe purpoſes; but, in the branches of mechanics, manufactures, and commerce, this Society remains yet unrivalled, and to it the united empire looks up for their protection and improvement. If I aſk the queſtion from you, Upon what depends the ſupport, the riches, and power of this nation? the anſwer inſtantly ſuggeſted to your minds is—Upon its trade and commerce. If they were loſt, the ſun of Britiſh glory would be for ever ſet. The natural inference which flows from theſe reflections, adds a great degree of conſequence to this Society, and impreſſes ſtrongly upon the mind, how much the nation is indebted to it for attention to theſe objects.

In the claſs of Mechanics alone, ſo numerous have been the rewards here given, that it would be impoſſible to recount them; and a view of the repoſitory belonging to the Society, which is open, throughout the year, for public inſpection, without any fee or reward from thoſe who come to ſee the machines, will convey an idea thereof much better than words.

Among the rewards to be conferred in the mechanical department of this Society, I ſhall notice one, which will doubtleſs meet your general approbation, viz. that for a boat, by Mr GREATHEAD, to preſerve the lives of perſons ſhipwrecked. Perhaps, no ſcene can more affect the mind, than a veſſel, near ſhore, in diſtreſs; where fellow-beings, ſtruggling with combined horrors, cry out for help in vain, and, wearied with labour, become the victims of a mercileſs ocean. An event of this

nature

nature at South Shields, where the greateſt part of the crew of the Adventure periſhed within 300 yards of the ſhore, and in ſight of a multitude of ſpectators, gave riſe to the preſent invention. It is to Mr Greathead, here preſent, that the world are indebted for a boat, built upon ſuch correct principles, lined and ſheathed with cork, and conſtructed with ſuch judgment, as almoſt to bid defiance to the dangers of the ſea. In every experiment made ſince its conſtruction, it has never failed of ſucceſs, and the lives of ſome hundred perſons have been already preſerved by it. The many teſtimonies which have been given in favour of Mr Greathead's boat, have induced the Society to adjudge him, not only a pecuniary, but their honorary reward. I have the ſatisfaction to add, that, in many parts of the ſea-coaſt, ſimilar boats have been built, or are building, and that his Grace the Duke of Northumberland, one of the Vice-Preſidents of the Society, has not only preſented to the inhabitants of North Shields a boat of this conſtruction, but has endowed it with an annuity for its ſupport. From a letter, which he has honoured me with, it appears he would have patronized Mr Greathead by his preſence here; but, unfortunately, his health will not permit it.

During the preſent ſeſſion, a ſilver medal has been voted to Mr Richard Knight, for a method of clearing land from ſtumps of trees, by blaſting them with gunpowder in a particular manner, ſo as to improve the land, and produce a conſiderable quantity of uſeful fuel at little expence.

The diſcovery of millſtones in Great Britain, to anſwer the purpoſe of French burrs for grinding corn, and to preclude the neceſſity of ſending large ſums of money abroad for this article, has, during the laſt three years, been crowned with ſuch ſucceſs, as to render an offer of further premiums, in that line, unneceſſary. Mr James Brownhill of Alloa, in Scotland, has diſcovered a quarry of baſaltes, near Stirling, which, from repeated experiments made and reported to the Society, have produced flour of a better quality than what has been heretofore made from French ſtones. A manufactory of them is now eſtabliſhed at Alloa, which is not only likely to ſupply the demands of this country, but furniſh a quantity for exportation. He will therefore receive a reward of one hundred pounds from the Society.

Mr James Noart of Fulham has lately invented an ingenious mode of ſecuring beams and other houſe timbers, whether the ends have been injured by the dry rot, or decayed by time, ſo as, at little expence, to prevent accidents which would otherwiſe happen. He will receive, for this invention, ten guineas.

In this claſs, ſeveral other inventions are yet under the conſideration of the Committee, the merits of which may probably be

be determined previous to the publication of the 20th volume of Tranſactions, now preparing for the preſs. The rewards now to be preſented, are thoſe which have been already adjudged.

The Society has endeavoured to ſtrengthen the united empire, by connecting more ſtrongly the intereſts of Great Britain and her colonies. It has been their object to encourage, in our dependencies, the culture and production of ſuch articles as have been uſually procured from foreign ſtates.

During the preſent ſeſſion, the culture of hemp, in Canada and the Eaſt Indies, has been an object which has occupied much of the time of the Committee, and the Society have received from both countries very valuable information upon theſe, and other ſubjects of importance to trade and commerce. It has been, and is, in the power of this Society, to open ſources of advantage to this country, which would contribute eſſentially to the intereſts of Government, if the object be attended to with the energy it merits.

The indefatigable exertions of Dr Anderſon have tended to introduce into our Weſt India iſlands many of the valuable exotics of the South Sea iſlands; and the cinnamon and cloves which he has lately ſent to this Society, bid fair to equal, or at leaſt be valuable ſubſtitutes for, thoſe produced in the Eaſt Indies.

The Honourable Joſeph Robley, governor of the iſland of Tobago, from three bread fruit trees in his poſſeſſion, has, from October 1800 to Auguſt 1801, raiſed 153 young ones, now in a flouriſhing ſtate. He expects the three old trees will furniſh him about 20 plants *per* month, and that he ſhall ſoon complete a plantation he has begun, intended to contain 1300 trees, which he thinks will ſupport about 1000 negroes in the bread kind of proviſions.

The rewards to the various candidates having been now delivered, I beg leave to acknowledge the publications which have been preſented to this Society from the Royal Society, the Society of Antiquaries, the Royal Britiſh Inſtitution, the Philoſophical and Commercial Society of Dreſden and Leipſic, the Linnæan Society, the Philoſophical and Literary Society of Mancheſter, the Dublin Society, the Society for Bettering the Condition of the Labouring Poor, and many others, whoſe gifts will be minutely detailed in the next volume of the Society's Tranſactions.

The variety of important objects which come under our view, have unavoidably led me into a diſcuſſion which may appear tedious to ſome of my reſpectable hearers; but when the mind enters warmly into the power and merits of the Society, it wiſhes to impreſs congenial feelings. I lament that I have

have not the eloquence of a Demoſthenes or a Cicero, to do juſtice to this meritorious Inſtitution. It gives me pleaſure, however, to inform you, that a rapid acceſſion of valuable members has been lately made, and continues to take place—that the objects of the premiums have been increaſed and extended to Ireland—and that the Society is, in every reſpect, in a flouriſhing ſituation. My reſpect for you, my fair countrywomen *, leads me to wiſh we had a greater number of your names enrolled in the liſt of members. That every mental accompliſhment ſhould be added to your perſonal beauties, hath been the object of this Society, which is open to receive you, and to recompenſe, by honours and rewards, every thing that may tend to your advantage.

To every branch of arts, manufactures, and commerce, by which the welfare of mankind can be promoted, the views of this Society extend; and its name and merits are known and reſpected in every part of the world. Its rewards and honours are not confined to ſex or ſituations in life, but open to the claims of every inhabitant in Great Britain and Ireland; the whole are invited to furniſh hints and improvements, to promote arts and commerce, and to meet the rewards ever ready for uſeful labours.

Permit me, here, to pay a tribute to the memory of a moſt valuable member, his Grace the late Duke of Bedford, whoſe loſs will not only be ſincerely regretted by every lover of agriculture, and by every man of ſenſe and judgment, but will, for ages, be deeply lamented by the whole nation.

A portrait of this excellent Nobleman, drawn from a buſt made by that eminent artiſt R. Nollekins Eſq. R. A. will grace the front of the 20th volume of Tranſactions.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Converting Graſs Land to Tillage.

GENTLEMEN,

THE Board of Agriculture having advertiſed ſeveral queries reſpecting the beſt mode of converting graſs land to tillage, and returning the ſame to graſs in an improved ſtate, I conceived that many pens would be at work, and waited impatiently to learn the ſentiments of the public on that ſubject. When it was announced that Colonel F———'s was the moſt approved plan, my curioſity, as well as that of many of my friends, was excited to obtain a peruſal of the pamphlet he publiſhed. I ſaid, however, Let us wait the opinion of the Conductors of the Farmer's Magazine, as I doubt not but extracts from it, with remarks,

* A conſiderable number of ladies were preſent when this ſpeech was delivered.

remarks, will appear in their work, and we ſhall then ſee whether it be worth purchaſing or not. I am glad that I waited, and ſaved my half crown; being now fully convinced that the ſyſtem of management recommended will neither enrich the farmer, benefit the public, nor improve the ſoil. The notes and remarks upon that Letter, in the Eighth Number, by the Conductors, ſo fully meet my approbation, that it would be ſuperfluous to repeat them. The Colonel profeſſes himſelf to be a practical farmer; I do the ſame, (though not qualified to write ſo well as he) having devoted thirty years principally to agricultural improvements; during which time, it may be allowed, I have had ſome practice, both upon clay and turnip ſoils. I am convinced, then, from my own experience, as are many intelligent and practical farmers in Yorkſhire, that the mode of cropping which he adviſes, is altogether erroneous. On the contrary, I highly approve of the courſe and method recommended in No. IX. ſigned N. This ſo fully meets my ideas, and is ſo conſonant with my experience, that I would not attempt to alter or improve upon it, farther than to mention, that in firſt taking up, I have found ploughing a double furrow to be an advantage. The operation is performed with the ſame plough, by putting a ſpade into the beam before the coulter, which cuts the ſward about two inches thick, and throws it flat into the bottom of the furrow. The underſoil, 2½ or 3 inches thick, is afterwards lifted completely upon it, which being looſe from the ſod, and receiving the benefit of the froſt and ſnow in the Winter months, will work with nearly as little trouble as a fallow, and bury the ſeed equally well. I have done a field in this way, that looked as fine and even as the beſt fallow, no graſs appearing, except in the cloſe of the two firſt furrows in the beginning of every ridge.

Beſides the advantage gained to the firſt crop, eſpecially if the Summer be dry, by the land lying more ſolid than when ploughed in the common way, and of courſe gathering and retaining the moiſture much better, I found, the next year when I came to fallow (the courſe I approve of), that the ſod was completely rotted, which greatly facilitated the working of the land. I own, the operation is a ſevere one, and requires much ſtrength of cattle, and ingenuity in the ploughman; but is eaſily performed after he has got his plough in proper trim. The ſucceeding courſe your Correſpondent recommends, I highly approve of; and the ſeven-courſe ſhift, giving a ſecond ſummer-fallow, and laying down the land with barley and graſs ſeeds, muſt, among men of practice and obſervation, be viewed as infinitely preferable to the putting it in graſs after the firſt fallow.

I am yours, &c.

A YORKSHIRE FARMER.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Burning Limeſtone with Peats.

GENTLEMEN,

In your Number for May 1802, page 146, one of your correſpondents deſcribes a machine for pounding unburnt limeſtone, for the purpoſe of uſing it as a manure; and ſays, that ſuch a machine is of great importance, when no other fuel but peat can be had.

For my part, I can by no means approve of his enormous and expenſive battering ram; but, on the contrary, think it totally uſeleſs, being convinced, from experience, that limeſtone can be burnt to better purpoſe, and at leſs expence, with peat, than with coal. When coal is uſed, the limeſtones are apt, from exceſſive heat, to run into a ſolid lump; which never happens with peat, as it keeps them in an open ſtate, and admits the air freely. The proceſs of burning, alſo, goes on more ſlowly with coal. No lime can be drawn for two or three days; whereas, with peat, it may be drawn within twelve hours after fire is put to the kiln; and, in every ſucceeding day, nearly double the quantity of what could be produced by the uſe of coal. The expence is, comparatively ſmall. A man and a boy will dig as many peats in one day, as will burn 60 Carliſle buſhels of lime, (the Carliſle buſhel is equal to 3 Wincheſter ones), and the expence, including drying, will not exceed four, or, at moſt, five ſhillings; while the coal neceſſary for burning the ſame quantity of lime, would have coſt twelve ſhillings at the pit. The wetneſs of ſeaſons is no argument againſt the uſe of peats, as they can be ſtacked near the kiln, when half dry, at any time of ſummer; the moiſture will be exhaled from them during winter, and they will be in a fit ſtate for burning in the months of April or May. I live in the north-eaſt diſtrict of Cumberland, where the farmers, in general, burn their own lime; and though there is coal in the immediate neighbourhood, I give a decided preference to peat, for the reaſons above mentioned.

If you think theſe hints worth notice, you may inſert them in your next. They may perhaps induce ſome of your readers to adopt the practice of burning limeſtone with peat, rather than pounding it with the expenſive machine recommended by your correſpondent; and, conſidering the great demand for coals, and their exportation from Britain to all parts of the world, certainly that valuable mineral cannot be too much economized.

I am yours, &c. J. D.

P. S. A great quantity of lime is burnt for ſale a few miles from Hawick. The coals are brought from Northumberland, over

over the mountains, upon galloways' backs, at a great expence, though there is plenty of peat within a few yards of the kilns. If the managers would uſe it, I am certain they would do much more buſineſs in the ſeaſon, and be enabled to ſell their lime cheaper.

FOR THE FARMER'S MAGAZINE.

Thoughts on the Sale of Corn by Weight, inſtead of Meaſure, in Scotland. Wrote in 1777, by the late Robert Fall Eſq. Merchant, Dunbar. Communicated by J. F. Erſkine Eſq. of Mar *.

THE ſale of corn in Scotland, by weight, inſtead of meaſure, would be attended with many advantages.

1*ſt*, In order to raiſe the heavieſt grain, the farmer would endeavour to procure the ſeed beſt adapted to the ſoil he cultivates; and, inſtead of ſowing, as at preſent, the ſame ſeed over and over again, perhaps, during the continuance of his leaſe, he would attend to a frequent change of ſeed, as the beſt means of improving the quality, and increaſing the produce.

2*d*, To make the land produce good weighty grain, requires that the farmer clean his lands, lay them dry in Winter, and ſow ſoon in Spring, for an early harveſt. All theſe requiſites, for the improvement of the weight, would naturally introduce a more careful ſyſtem of farming over Scotland; and though it is practiſed, at preſent, in ſome counties, it muſt be allowed, that, in general, the farmers in Scotland are exceedingly defective in the above particulars. It will follow, that, by the farmer's attending to the production of the beſt grain, he muſt, of neceſſity, be compelled to practiſe the moſt approved ſyſtem of farming, ſo as to make the land yield the greateſt increaſe.

It is not eaſy to calculate exactly what Scotland may gain by this improvement. It is ſuppoſed, that Scotland contains about twelve hundred thouſand inhabitants; and that, in a very moderate calculation, they conſume about two millions of bolls of grain. I do not here include, on the one hand, the corn uſed by horſes; nor, on the other, the quantity of corn imported from England and other places, ſuppoſing the one to balance the other

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* The Conductors of the Farmer's Magazine embrace this opportunity of acknowledging the many obligations conferred on them by Mr Erſkine: They have not only to thank that gentleman for communicating a number of valuable papers, but likewiſe for various judicious hints relative to the general management of the work. N.

other. I calculate only on the quantity neceſſary for the food of the inhabitants.

The weight of wheat carries from fifty-five to ſixty-three pounds per Wincheſter buſhel; oats from thirty to forty pounds; barley from forty-two to fifty Engliſh avoirdupois weight. It is certainly a moderate calculation to ſuppoſe, when the difference of weight is ſo great, that the quality may be improved, at leaſt, two pounds weight per buſhel, which comes to about four *per cent.* in the quantity, and amounts, at that rate, on the conſumption, to eighty thouſand bolls *per annum*. If, by this means, the farmer is induced to follow a better ſyſtem of cultivation (beſides the above four *per cent.* ariſing upon the improvement of quality), a conſiderable increaſe of quantity will be produced, of which I cannot pretend to form an exact calculation. But even reckoning one half of the foregoing increaſe, as ariſing from all theſe different advantages, it would be ſuch an addition to the annual produce of Scotland, as to render the country more independent than it is at preſent on foreign ſupplies.

Selling corn by weight inſtead of meaſure, would render the ſale more ſimple, and leſs liable to deception. I am well aware, that there will ſtill be room for deceit, by making the grain moiſt; but, in that, the buyer muſt uſe his own judgement, and fix a price according to the condition the grain is in. If it is a landlord who is to receive from his tenants, he can inſiſt on the corn being delivered in a proper dry condition, or on a proper allowance for the moiſture. It is impoſſible to contrive any general rule, that will ſuperſede the neceſſity of judging; ſomething muſt be left to the ſkill and knowledge of the buyer and receiver of corn. And here it will be proper to obſerve, that we are more liable to be deceived, when we buy moiſt grain by meaſure, than by weight; becauſe more is added to the bulk, by ſwelling, than it gains by the weight. There are many other arguments in favour of eſtabliſhing the ſale of corn by weight, which I need not enumerate. I believe the country at large are ſatisfied of the propriety of ſelling in that way.

It remains, now, to be conſidered, how it can be done, and in ſuch a manner, that the law may be eaſily carried into execution. I humbly beg leave to offer the following plan of an act of Parliament:

That all corn in Scotland be ſold by weight, after Whitſunday 1781. After that term, an Engliſh quarter of wheat ſhall be eſtimated to weigh ; a quarter of barley ; a quarter of oats ; a quarter of rye ; a quarter of peas ; and a quarter of beans .

That the meal of wheat, and the other fore-mentioned kinds of grain, be ſold by the boll, containing one and a quarter hun-

dred Engliſh, which correſponds to the preſent weight of a boll of oat-meal, and half a ſack of flour in England.

That the law ſhall order all maſters who receive corn by meaſure, and their tenants who pay their rents in corn, under the ſtipulations of a leaſe, feu, or otherwiſe, that they convert their grain, now payable by meaſure, into payment by weight, under the authority of the new act of Parliament, and that they do ſo, on or before Whitſunday 1780; and, if they neglect to comply, that it ſhall be done for them, after that period, with a penalty of one ſhilling per boll, payable one half by the landlord, and the other half by the tenant, to be applied as hereafter mentioned.

I mean that miniſters of the Church of Scotland, and poſſeſſors of Crown lands, ſhall be included in the foregoing deſcription; and that a proviſional clauſe ſhall be made in the law, to indemnify the party willing to comply, and to fix the whole penalty on the party who refuſes ſettling within the year before mentioned, ending at Whitſunday 1780.

After Whitſunday 1780, the Sheriffs in the different counties ſhall appoint an Inqueſt for aſcertaining the converſion of meaſures into weight, betwixt the landlord and tenants who have neglected to comply with the act. The members of this Inqueſt, acting in different parts of the reſpective counties, are to weigh the corn uſually paid in the parts of the county where the farms lye, and that by the ordinary meaſure, which the tenant has been formerly in uſe to pay by. They are then to report, on oath, to the Sheriffs. On their report, the Sheriffs are to make a calculation, how many quarters muſt in juſtice be paid, according to the new act.

That the Inqueſt be paid for their trouble, by order of the Sheriff, from the fund of the fore-mentioned penalty of one ſhilling per boll levied within the county. I mean that this ſhilling per boll ſhould only be levied for one year.

That the quantities converted by private bargain, or by Inqueſt, be recorded in the Sheriff books, to be held as a rule of payment, during the continuance of the leaſe, feu, or otherwiſe; but with power to parties ſettling by private bargain, to do it under the authority of a deed betwixt themſelves, as the law allows in other matters. Penalties to enforce the law.

If ſelling by the quarter is not ſo agreeable as by the boll, then all kinds may be ſold by the boll, of ſix Wincheſter buſhels. At preſent, it is the general practice in Scotland, to ſell wheat, peas, and beans by the boll of four buſhels; and the oats and barley by ſix buſhels. But even in theſe proportions of meaſure, not only every county differs from another, but different meaſures are uſed in the ſame county.

It is of no conſequence by what denomination of meaſure, or at what weight the meaſure is aſcertained: the principles of ſelling by

by weight will remain the ſame, if one uniform method is adopted.

It is preſumed, that, on the ſame principles, an uniformity of weights may be eſtabliſhed in Scotland. The Dutch weight, as being better underſtood in the country, and more eaſily divided into ſmaller parts, ought to be adopted for the ſale of corn, and every other commodity in Scotland.

I am well aware, that the Legiſlature hath had theſe matters under conſideration, and that many difficulties have ariſen with reſpect to England; but it does not follow from thence, that the noblemen or gentlemen in Scotland, ſhould delay the buſineſs in regard to Scotland, if it can be done on eaſy and ſimple principles; and they have the greater reaſon to attend to it, both becauſe cultivation in Scotland is ſo far behind that of the ſouthern part of the united kingdom, and becauſe their tenants do not in general pay due attention to the quality of the corn they bring to market.

The propoſer of theſe regulations does not flatter himſelf, that they are thoroughly digeſted; but it will give him great pleaſure, if they ſerve to draw the attention of his countrymen to an object, which, in his apprehenſion, is of very great importance, both to the landed and commercial intereſt of Scotland, as they tend to ſecure a more permanent ſupply at home, and to ſuperſede the neceſſity of the frequent importations of corn from other countries.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Account of the Worms which infeſted the High Sheep-Farms in Tweeddale, in the Months of June and July laſt.

GENTLEMEN,

As you wiſh for information concerning every point connected with rural affairs, I take the liberty of tranſmitting a ſhort, but correct account, of the worms which attacked the high ſheep-farms in this county a few weeks ago; and probably will afterwards communicate ſome additional remarks on the ſame ſubject.

The worm appeared about the middle of June, on the high-lying farms at the head of Yarrow Water; and, latterly, on thoſe ſituated at the head of Megget and Tweed. In ſhape, it is ſomething like the common kale-worm, though ſmaller; and they were found in greater numbers upon the dark, than upon the ſunny ſide of the hills. A ſimilar devaſtation viſited the ſheep-paſtures of this county in 1759; and, from what I can learn, the ſtate of the weather, in the Winter and Spring months of that year, was nearly ſuch as we experienced this ſeaſon.

The chief devaſtation was committed on the high farms in the diſtricts abovementioned. In many places, the ſurface of the ground was quite brown, after being ravaged by theſe inſects. Patches, from half a mile to a mile ſquare, were totally covered with them; and the herdſmen could not ſafely ſit down, unleſs they firſt trode them to death, for a conſiderable breadth of

ground around where they meant to place themſelves. If this precaution was neglected, worms were found crawling all over the clothes of the herds in a few minutes.

The coarſer graſſes of bent and ling, growing in places covered with fog, ſeemed to be the chief object of their taſte, and the fine *nature* graſſes were almoſt in every caſe neglected. A perſon who preſerved them, in order to diſcover the fly from whoſe eggs they are derived, found this to be their taſte, upon trial, whilſt they continued in their worm or eating ſtate. In their aurelia ſtate, they are of the ſize, and very like in colour, to a ſmall dried raiſin. In the worm ſtate, they are much like to, though ſhorter than, the common kale-worm; ſtriped longitudinally with brown ſtripes, upon a bottom of dun white. The ſea gulls ſoon found them out, as well as the crows; and the hills made a curious appearance, when covered with flocks of theſe white and black animals. They did not, like the grub, merely undercut the graſs, but ate all up; ſometimes beginning at the top of the blade, and eating downwards; at other times, eating the plant through, farther down, and then devouring the whole.

The Spring was long cold in the year 1759, when they formerly appeared, as well as this; and it is conjectured that this might have prevented the aureliæ of laſt year from becoming flies ſo early, as to lay their eggs in time to produce worms ſo ſoon as to be killed by the Spring rains; and that, therefore, all the worms produced had come to maturity.

The ground they had eaten bare, looked, at a diſtance, like withered coping ſod in a drought, on the top of a dike.

Their devaſtations ceaſed three or four weeks ſince; incredible numbers having been devoured by the crows and gulls; heaps of them waſhed off the hills by the rains, and ſwept into the rivulets and larger waters; and the remainder having retired into holes under the fog, to undergo their change into the aurelia ſtate.

I wiſh ſome of your readers, from the infected quarters, would impart what they know, or what they recollect, concerning the ravages of the worm in 1759. If they ſpeak truth, and write ſo as a Scotſman can underſtand them, the purity of their language is but a ſecondary object. I am afraid, however, that an apprehenſion of being defective in that reſpect, deters many well-informed practical agriculturiſts from communicating the reſult of their experience to you. Indeed, from a ſilly pride of remaining ſilent, unleſs we can ſpeak the Engliſh language to perfection, many important obſervations have been conſigned to oblivion; and men have mutually benefited each other, as little by the heavenly gift of ſpeech, as if they had been formed dumb like the brutes. Yours, &c. F.

Auguſt 28th 1802.

BRANCH II.

REVIEW OF AGRICULTURAL PUBLICATIONS.

General View of the Agriculture of the County of Norfolk: with Obſervations for the Means of its Improvement. Drawn up for the Conſideration of the Board of Agriculture and Internal Improvement. By Nathaniel Kent, of Fulham, Middleſex. G. Nicol, *London*, 1796.

We enter with diffidence on this review of the agriculture of the moſt celebrated farming county in England, being ſenſible that Mr Kent, the Reporter, is well qualified to deſcribe it in the moſt ſatisfactory manner. In executing this taſk, we ſhall have great pleaſure in pointing out to our readers the beſt practices in the agriculture of Norfolk: but it is eaſier to diſcover a blemiſh, than to rival what is excellent. We hope, however, that we ſhall not be thought aſſuming, when, in temperate language, we alſo point out the errors of intelligent and ſpirited farmers, or the defects of an experienced and reſpectable Reporter.

It is but candid to acknowledge, that Mr Marſhall's account of the rural œconomy of Norfolk, had, in ſome degree, preoccupied our minds, and that Mr Kent's ſurvey would have afforded us more pleaſure, if it had been the firſt treatiſe on the Norfolk huſbandry, which had been ſubmitted to the public. But we ſhall examine his report without any prejudices againſt its author; and ſhall have peculiar pleaſure in detailing, minutely, thoſe facts or obſervations which appear to merit general attention.

We begin with remarking, that though Mr Kent has not adopted the plan of a report laid down by the Board of Agriculture, his arrangement, on the whole, is a good one; and, with a few exceptions, to be afterwards noticed, is perhaps equal to that which was propoſed by the Board.

Under the firſt ſection, entitled, *General Obſervations*, we give all credit to the Reporter for the following ſentiments—'Nothing, in my opinion,' he ſays, 'will tend more to excite a general ſpirit of improvement, than the publiſhing a general abſtract of all the beſt information that can be collected from the different reports, contraſting the beſt with the worſt practices. A ſhort ſtatement of this kind, drawn up with perſpicuity, will be more read, more attended to, and make a deeper impreſſion on the farmer's mind, than long deſcriptions from theoretical writers.'

On the ſecond ſection, which treats of *the ſituation, contents, di-*

viſion, and population of Norfolk, it may be remarked, that one half of the whole county is both arable and encloſed; that one ſixth part more is arable, but ſtill common-field; and that one thirteenth or fourteenth part conſiſts of unimproved commons. With all the reſpect that we feel for the agriculture of Norfolk, we muſt regret, that ſo great a proportion of the beſt cultivated county in England ſhould ſtill be common-field, and, owing to its being in that ſtate, either not improved at all, or very imperfectly cultivated. Surely ſome general law ſhould be paſſed for dividing the common-fields of England.

The third ſection, which treats of the climate and weather, informs us, that 'the air is extremely cold in Winter—that vegetation is kept back during the early parts of the Spring by ſharp eaſterly winds, and a vaſt quantity of ſleet—that cattle, on this account, often ſuffer ſeverely—and that, when the turnips happen to periſh early, the farmer finds himſelf obliged to diſpoſe of his ſtock to a very great diſadvantage.' To guard againſt this evil, Mr Kent recommends 'the keeping a good ſtock of hay in ſtore, and ſowing a ſufficient quantity of the land with rye, or Winter vetches.' To which may be added—ſowing a part of the turnips three weeks later than the reſt, which enables them to endure froſt; and alſo a quantity of ruta baga, or Swediſh turnip, which cannot be injured by the froſt. When the Summer is dry, and a ſevere Winter follows, the Norfolk farmer can ſeldom preſerve much of his hay in ſtore till the Spring; but he can always have a conſiderable quantity of late ſown turnips, and of ruta baga.

The fourth ſection, concerning the ſurface and ſoil, ſtates the different gradations of good and bad ſoil—which is deſcribed to be excellent on the north and north-eaſt of Norwich—good on the ſouth and ſouth-eaſt of that city—inferior on the weſt and north-weſt—and, on the ſouth-weſt, ſo very poor, as to be better adapted to rabbit warrens than to cultivation. We are ſurpriſed to find here, that rabbit warrens *pay better*, or yield more profit, than any other thing to which the land could be applied—though we do not queſtion what Mr Kent has ſtated on this ſubject.

Of the fifth ſection, which treats of roads, navigation, and rivers, we only quote a remark of Charles II, who obſerved, that 'Norfolk ought to be cut in ſlips to make roads for the reſt of the kingdom.' Mr Kent inſiſts, that the witty King '*undoubtedly meant* to compliment the county upon the goodneſs of its roads above other counties.' Sir Thomas Beevor, in a foot note, is a little more guarded in his language, when he aſks, *Might not this mean* that the ſoil was ſo dry and barren, as to be unfit for any other uſe than that of roads? We ſuſpect that this was what the King *probably*

bably meant when he made the above remark: And would remind our readers, that the great ſource of the improvements in Norfolk, is the marl with which the county abounds—that the value of this manure was either unknown, or imperfectly underſtood, in the days of Charles II.—and that Norfolk, before the uſe of marl, and the introduction of the turnip huſbandry, was not on a footing with many other counties, to which it is now ſuperior. It is more agreeable to truth, and a better compliment to the intelligent farmers of Norfolk, to ſay, that they have made good corn fields of what was originally only fit for cutting into ſlips for roads, than to ſuppoſe that, in the time of Charles II, it was 'on a ſuperior footing, on account of its proximity to Flanders.'

On the 6th ſection, concerning Manures, and their application, we would obſerve, that Mr Kent has omitted mentioning *lime* in the enumeration of the different kinds of manure which are uſed in the county. He juſtly repreſents the marl of Norfolk as 'of ineſtimable value;' and informs us, 'that 12 cartloads to an acre, of the white, or rather yellow marl, will, the ſecond year after it is laid on, change the nature of the land; and that moſt of the exhauſting weeds which impoveriſh the ſoil, and check the corn in its infancy, are effectually deſtroyed, as it has a great tendency to keep land clean.' We could have wiſhed, that inſtead of twelve cartloads, Mr Kent had ſpecified the number of cubic feet, and alſo informed us how many grains of pure calcareous earth are found in every hundred grains of marl, as has been done in the Report of Lancaſhire, where the marl is much inferior to that of Norfolk. We alſo ſuppoſe that Mr Kent would have ſpoken more correctly, if, inſtead of ſaying, that *the exhauſting weeds are effectually deſtroyed by marl, or that it has a great tendency to keep land clean*;—he had ſaid—'From the combination of the ſoil with this marl, all thoſe exhauſting weeds, which would otherwiſe choke the corn, but which do not vegetate in calcareous ſoils, ſoon diſappear.' The fact is, that weeds, as well as corn, thrive only on certain ſoils; and, by altering the combination of the different ingredients, or component parts of the ſoil, the earth is rendered unfit for raiſing what it formerly produced. We mention theſe things more particularly, becauſe Mr Strachey, member for Biſhopscaſtle, obſerves, in a foot note, that, 'this being the fact, perhaps ſome philoſophical account might be given, why weeds muſt be deſtroyed by marl, though it cauſes other plants to vegetate and flouriſh.'

Beſides marl, clay, and *ſmall ſand* from the beach, (we apprehend that Mr Kent means *ſhell ſand*, an article highly calcareous), which are natural advantages poſſeſſed by the county of Norfolk, Mr Kent obſerves, that it has 'river weeds, ſoot,

malt duſt, and many other ſimilar articles, in common with the reſt of England.' He alſo very properly recommends to the Norfolk farmers to turn up the borders of corn fields, and the banks of maiden earth in the roads, and to mix them with their common yard-dung. He alſo recommends a permanent fold during the Winter months, for penning their ſtore-ſheep; aſſerting, that in one Winter, he made 600 cartloads of dung from 600 ſheep. On the ſubject of folding ſheep, we may obſerve, that in a county 'where the air is extremely cold in Winter, and where the vegetation is kept back by ſharp eaſterly winds, and a great quantity of ſleet,' there ſhould be very complete ſhelter, and alſo a houſe attached to the fold, into which, in very ſevere weather, the ſheep may retire. Every unneceſſary expoſure of dung to the Winter froſts ſhould be avoided; the great objection to folding being, that at leaſt one fourth part of the ſubſtance of the dung is deſtroyed, by its expoſure to the air. Internal heat to promote fermentation, is of great ſervice to dung; but it ſhould be preſerved as much as poſſible from the froſts in Winter, and exceſſive heat of the ſun in Summer.

On the 7th ſection, it is ſufficient to remark, that Mr Kent ſuppoſes that three fifths of the county are freehold; one fifth belonging to the church, to collegiate or corporate bodies; and the remaining fifth copyhold, under lay lords.

On the 8th ſection, viz. on the arable land and courſe of cropping, Mr Kent has been more conciſe than we could have wiſhed. As Norfolk is a large county, and of very different qualities of ſoil, it would have been proper to have ſtated the rotation of crops *actually followed* in different places. We are only told, that the *landlord generally wiſhes* to fix this in a ſix-ſhift courſe: 1. Wheat; 2. Barley or Oats; 3. Turnips; 4. Barley or Oats, with Clover Seeds; 5. Hay; 6. Paſture till Midſummer: but that the *occupier often endeavours* to uſe only a five-ſhift courſe, leaving out the laſt, viz. *paſture till Midſummer, before breaking up his land;* and that, in ſome of the beſt parts of the county, *many tenants carry on a four-ſhift courſe*, viz. Wheat, Turnips, Barley, and Clover. He mentions one objection to this laſt, (though the moſt profitable where the ground will allow it), that the land, though ever ſo good, will grow tired of a too frequent repetition of turnips and clover. Sir Thomas Beevor, in a very judicious note, recommends the four-courſe ſhift, in preference to all others. But Mr Kent ſays, that in the great weſtern parts of the county, the rotation of ſix ſhifts ought to be ſtrictly adhered to. We muſt here beg leave to remark, that this rotation is more exhauſting than the four-ſhift courſe, and that two ſucceſſive grain crops ought not to be allowed in Weſt Norfolk,

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at any rate. For that part of the county, a five-ſhift courſe, viz. 1. Wheat; 2. Turnips; 3. Barley or Oats, with Clover; 4. Hay; 5. Paſture; or two white crops to three green crops, are all that ſhould be allowed; and we confeſs that we were ſurpriſed to find, that Mr Kent would recommend two ſucceſſive white crops, viz. Wheat and Barley, or Oats, to be taken in the weſtern parts of the county.

On the 9th ſection, viz. Modes of Culture, Mr Kent very juſtly remarks, that ploughing in Norfolk is done much cheaper, and with greater care, than in any other county; but he ſeems to be too zealous an advocate for ſhallow ploughing. We apprehend, that, in thoſe parts of Norfolk where the rotation is pretty quick, viz. a four-courſe ſhift, it would be very proper to plough the land intended for turnips pretty deep, and to bring up mould that had been four years reſted in the bottom, for being mixed with the dung; which, in our opinion, would remove the complaint, of the lands being tired with the frequent repetition of the turnip crop.

Under this head, is alſo included the dibbling of wheat. An honeſt and induſtrious labourer, named James Stone, introduced this practice in 1774, in order to ſave a few pecks of wheat to ſupport his children, at a time when he had little employment. His neighbours at firſt laughed at him; but an excellent crop, uniformly good over the ſmall patch of ground, made them change their opinion; and the poor man and his children afterwards got much employment. As Mr Kent has omitted the relation of this circumſtance, we thought it our duty to record it in this place; though the dibbling of wheat is only practicable on a large ſcale, where women and children, as in Norfolk, carry on the work. It coſts about half-a-guinea per acre; is a ſaving of rather more than a buſhel of ſeed, and the crop is *more uniformly* good, than where it is *ſown*; which is a great recommendation of dibbling. In theſe two laſt calamitous ſeaſons, ſeed-wheat was ſo very dear, that dibbling was a matter of ſtill greater conſequence; and, where employment can be given to women and children, both humanity and ſound policy recommend the practice.

In this ſection, alſo, Mr Kent employs ſeveral pages on the turnip huſbandry of Norfolk. We do not, however, give the leaſt credit to the ſtory of this article being introduced from Hanover into Norfolk, by Lord Viſcount Townſend, in the reign of George I. If we had been told that the firſt Lord Viſcount Townſend, who received that title from Charles II, had imported them from Flanders, where the turnip huſbandry, at that time, was in great perfection, we might not have called this in queſtion;

tion; becauſe turnips have been cultivated in Eaſt Norfolk, as Mr Marſhall remarks, for more than a century. But the people of Hanover *are not*, at this moment, *acquainted* with the turnip huſbandry; which Mr Kent ſuppoſes them to *have loſt*, from the circumſtance of the ground being tired of carrying turnips.

We regret that this Reporter has not mentioned the produce of an acre of turnips by the number of tons, but only by the number of cart loads, viz. from 30 to 40, as heavy as three horſes can draw. But we regret yet more, that 'the ground in Norfolk does not reliſh them ſo much as formerly; and that this is now become a teazing and precarious crop, and admits of no certain rules to enſure abſolute ſucceſs.' Though, on ſimilar ſoils, the Norfolk huſbandry may be ſafely imitated, yet, drilling and horſe-hoeing turnips muſt, in a general point of view, be conſidered as preferable to ſowing according to the broad-caſt method. We believe, that, inſtead of uniformly ploughing turnip land five times (or giving it five earths) in every ſituation and ſeaſon, it is neceſſary to plough ſix times, and, in others, four may be ſufficient. It may be noticed, that hoeing is twice done, in Norfolk, at the expence of ſix ſhillings an acre; while, in Scotland, it would coſt nine or ten ſhillings. Where labourers cannot be had in ſufficient number, the drilling of turnips is abſolutely neceſſary: And the crop is generally better than what is got from broad-caſt ſowing; although, no doubt, it is poſſible to raiſe a greater weight in this way, by hoeing out the turnips like ſo many equilateral triangles.

We cannot diſmiſs this article, without highly commending the Norfolk farmers for committing their barley, after turnips, to the ground in a highly pulveriſed ſtate.

On the 10th ſection, which treats of *graſs land*, with the means of its improvement, it may be remarked, in general, that the Norfolk farmers, who are deſervedly eſteemed for managing their turnips and barley, are not very expert in drainage; and that the Reporter has given them ſeveral judicious directions, taken from the practice of other counties.

The ſubject of the 11th ſection is *the average crops, and ſcale of rent.*—As to the firſt of theſe, three quarters of wheat, and four of barley, are eſtimated to be the general average, one year with another, by this Reporter. Sir Thomas Beevor, however, is of opinion, that the average crop of wheat is not more than 2½ quarters. We wiſh to think that Mr Kent has not over-rated, and that the worthy Baronet has under-rated this average.

Reſpecting the ſcale of rent, we expected to be informed what the rent of an acre was in the neighbourhood of Norwich, and what in places farther removed from market towns. But we were not a little ſurpriſed to find the ſcale of rent depended chiefly on the circumſtance of the proprietor's poſſeſſing a large or a ſmall eſtate,

eſtate. A man of great fortune may not always look ſo cloſely to his intereſt, as a man who has only a ſmall property may do; but an eſtate's being either high or low-rented, depends more on the character of the perſon who lets it, than on the extent of his fortune.

In general, the average of the county is ſaid to be fifteen ſhillings *per* acre. It deſerves our attention, that the rent of land, in ſeveral counties of Scotland, is nearly double the ſum paid in this valuable diſtrict.

In ſection 12th, entitled *Irregular Crops*, we expected to have ſeen, what, *in fact*, were the inſtances of departure from the rotation of crops formerly mentioned. This, however, has been omitted; and, in place of it, ſome directions are given for allowing, in certain caſes, the farmer to depart from his courſe of cropping. Vetches, potatoes, the drumheaded cabbage, carrots, buck wheat, and peas, are mentioned. Sainfoin is particularly recommended; as alſo, the flooding of meadows, and the greateſt economy in the management of hay, which Mr Kent recommends to be always cut, like ſtraw, into chaff. As the ſection was on an *irregular ſubject*, the Reporter has not confined himſelf to any particular topic; yet his remarks, though deſultory, are judicious.

The title of the 13th ſection is, *Fallowing Exploded.* Surely this is a moſt improper title to a ſection of the Report of the Agriculture of a county. This is no controverſial performance, but a ſtatement of facts, intermixed with obſervations. This ſection, therefore, ought to have been placed in the Appendix, or in a large note at the end of the 9th ſection, on the *modes of culture.*

With reſpect to the ſubject of this ſection, we refer our readers to the 4th number of this Magazine. We ſhall be ſatisfied with applying an obſervation of Dr Johnſon's to the matter in diſpute. When the Doctor was aſked his opinion, whether public or private education was beſt, he anſwered—'One may be good for my ſon, another for your ſon.' In like manner, a mode of culture may be very proper for Norfolk, which would not at all ſucceed in Eaſt Lothian, or in Huntington. Land, in reſpect of tenacity, may be divided into three kinds—the light, the ſtiff loam, and the ſtiff clay. On the firſt, turnips may be ſown in broad-caſt; on the ſecond, in drills; on the third, drilled beans may be raiſed, where this can conveniently be done; and, where this cannot be done, a complete fallow ſhould be given. With all the reſpect that we feel for Mr Kent, it may be remarked, that the Norfolk culture, like the Norfolk plough, anſwers beſt in light, flat, and kindly ſoil—that is, in Norfolk. We proceed to ſection 14th, which treats of common-fields and encloſures.

It

It is unpleaſant to differ from an experienced and judicious writer; and we are much more happy in commending, than in cenſuring.

The obſervations contained in this ſection are highly deſerving of attention; and one important fact is ſtated by Mr Kent, which ſufficiently ſhows the advantage of encloſures. The pariſh of Filbrigg, belonging to Mr Windham, before it was encloſed and divided, contained only 121 inhabitants: it now contains 174. How powerful an argument for encloſing and improving lands, at preſent neglected!

The 15th ſection, in which the commons are conſidered, carries the ſubject ſtill farther, and with great judgement. Above ten thouſand perſons would be added to the population of the county, by the diviſion of theſe commons, which, far from being waſte lands, are many of them worth 20s. per acre.

The 16th ſection gives a very ſatisfactory account of the woods and plantations. Here, we learn with pleaſure, that one old gentleman, Mr Marſham, has a tree, of his own planting, which meaſures 80 cubic feet, (we hope he ſhall ſee it meaſure an hundred): that Mr Coke, the member for the county, had planted, in 1795, near 500 acres, and was planting 50 acres yearly, allowing the poor to raiſe their potatoes among his young trees: that Mr Windham, who is a conſiderable planter, has one plantation which is unrivalled: that a belt, ſixty-ſix yards wide, and nine miles round, encloſes an eſtate near Thetford. We can only ſelect a few examples; but hope, what is mentioned will excite imitation. And we not only excuſe, but approve of Mr Kent, for republiſhing a letter of his own, in favour of raiſing Spaniſh cheſnuts. Whatever can be uſeful to mankind, may be repeated or republiſhed; and, though we differ in ſome things from this Reporter, we have no deſire to detract from his well-earned reputation.

In the 17th ſection, which is concerning *live ſtock*, we learn that one half of the cattle fatted or grazed are Scotiſh, one fourth Iriſh, and the other fourth home-bred. The Reporter gives a decided preference to the native ſheep; and inſiſts, that no change of this breed ſhould be made by the farmers, till the gentlemen or proprietors have introduced a better. Perhaps he goes too far, when he ſays no other kind will anſwer penning ſo well as the native ſheep. He appears to be too much attached to folding, when he ſays, 'the great farmer cannot keep his land ſo well by any other means, and commits upon himſelf a ſort of *felo de ſe*, when he neglects it.' A great farmer, or a man of great capital, who has an extenſive farm, is not reſtricted, by the largeneſs of his farm or fortune, though a ſmall farmer is ſometimes limited in theſe reſpects.

In

In ſection 18th, Mr Kent complains of the great expence of *buildings and repairs.* He ſtates, 'that it is not uncommon to have barns which coſt 300l., on a farm of 100l. yearly rent; and that ſome farm-houſes have coſt 1000l., upon farms of about 300l. a year.' In our opinion, the whole capital of the farmer ſhould be employed in cultivating his farm; the houſes, of all kinds, ſhould belong to the proprietor: And, in order to prevent any complaints reſpecting the farmer's accommodation, the farmer ſhould pay a reaſonable per centage on the ſum expended on buildings and repairs. This ſhould be quite diſtinct from the rent of the farm; and, by this means, neither party would ſuſtain any injury. We have ſeen a number of excellent plans, both of farm-houſes and cottages; and apprehend, that from the emulation among many of the landed proprietors, with reſpect to the moſt compact, yet comfortable, buildings of both kinds, much good may be expected.

On ſection 19th, concerning the implements of huſbandry, it may be ſtated, that the Norfolk plough, waggon and cart, have little chance of being introduced into other counties. We prefer the Rotherham plough, improved by Small; and have the authority of Mr Abraham Jones, a Norfolk farmer, in preferring ſingle carts, as made in the neighbourhood of Edinburgh, to the cart, waggon, and tumbril of Norfolk. It ſupplies the place of them all.

In ſection 20th, the Reporter has very properly pointed out the advantage of leaſes; and the example of Mr Coke, Member for the county, as worthy of imitation—in fixing the terms of the new leaſe, at leaſt two years before the expiration of the old. There is, on this ſubject, a ſtrange note by Mr James, that 'leaſes moſt aſſuredly may be granted for too long a period, as the contrary.' We conſider this as perfectly abſurd. A man who has a *perpetual feu* may delay improving his ground, thinking he can *begin at any time.* But a man, who *has only a leaſe*, though it were for fifty years, knows that the *ſooner* he begins, the more *advantage he derives.* We conſider long leaſes, with riſing rents at different periods of the leaſe, to be beſt, both for the proprietor and the farmer.

The 21ſt ſection is entitled '*The ſize of farms conſidered.*' This is another example of bad arrangement. The Agricultural Report of Norfolk is no way connected with this ſection. If the Reporter wiſhed to introduce his private opinion on this ſubject, he ſhould have contrived to throw it into the Appendix; or, if he wiſhed to place the ſubject in a more prominent point of view, he might have introduced it into his preliminary obſervations, or in the ſection on the modes of culture.

With

With reſpect to the ſubject of this ſection, though ſatisfied, that where a farmer has both capital and abilities, large farms are beneficial to the country; yet we ſhould be ſorry there were any combination among landholders, to throw all their property into large farms. Let there be farms of all ſizes, that a man of genius and induſtry, who begins with a few acres, may enlarge his ſphere of action, as his capital increaſes. In ſome countries, where the ground is broken, and the lands imperfectly cultivated, nature has marked out the boundaries of farms. In others, where the ground is flat, and moſtly arable, no harm can ariſe from large farms. To talk of a *monopoly* of farms in *Great Britain*, is altogether abſurd; and it is aſtoniſhing that ſo reſpectable a man as Mr Kent ſhould maintain, that 'no farm ought to exceed 200l. a year, where the land is of good quality, or 500l. a year upon the pooreſt land.' Let men employ their capital as they pleaſe; and let men, who have acquired capital in agriculture, be permitted to enlarge their ſphere of action. They equally ſerve themſelves and the country.

The 22d ſection is concerning the advantage *of working oxen*. This is alſo a controverſial ſubject, not neceſſarily connected with the Agricultural Report of Norfolk. As the Norfolk horſes are allowed to be among the beſt working horſes in the iſland, and oxen very little uſed, the preſumption is, that the intelligent and ſpirited farmers had made the proper choice of the animal whoſe labour they preferred; and when we conſider the *great expedition* made by Norfolk horſes in ploughing, we muſt ſee, that oxen could *not travel nearly ſo faſt*. In other counties, where the *furrow is deep*, and the cattle *walk ſlowly*, oxen may *be admitted*: But, in Norfolk, horſes are certainly *to be preferred*. Mr Kent propoſes a team of four oxen; and that other two oxen ſhould belong to this team, but be allowed to reſt one day in three. Theſe *ſix* oxen would eat up the produce of their labour, and require two men to attend them; while, after all, two horſes would, in Norfolk, do more work. As to riding and coach horſes, Mr Kent ſeems to think, not only that they have increaſed, and are increaſing, but that they ought to be diminiſhed. This is not the influence of horſes, but the increaſe of luxury; and is a proof of the proſperity of the country. We could wiſh, that the cheapeſt and beſt methods of feeding this noble animal were more generally attended to; and that every Norfolk farmer would allot a few acres for carrots, potatoes, or ruta baga to his horſes. This would ſave a great deal of corn, and the horſes would be healthy and in good order.

On the 23d ſection, which treats of the *Commerce*, or of the *Exports and Imports of Norfolk*, we obſerve with pleaſure, that Mr Kent has been ſufficiently particular, and alſo accurate, in

in his ſtatements. The exports of Norfolk, in corn, grain, flour, &c. amount to about nine hundred thouſand pounds; and the exports of native cattle and other animals, joined to the profits made in feeding the black cattle bought in other counties, is above three hundred and ſeventy thouſand pounds. The friends of agriculture will remember, that the annual Norfolk exports, previous to 1796, were nearly thirteen hundred thouſand pounds; and that, conſidering the late riſe in the price of cattle and proviſions, it is at preſent little ſhort of two millions.

In the 24th ſection, entitled '*General Outgoings*,' *tithes* and *poor's rates* are conſidered under this *ſoft appellation*. We think they ſhould have been affixed to the ſection *on the ſcale of rent*. The Reporter is evidently ſhy in ſpeaking out his mind; yet he has too much good ſenſe to approve of either. He ſtates one important fact on the ſubject of tithes, that the lay impropriators, who poſſeſs about one fourth of the tithes, are at leaſt as ſevere as the clergy in exacting them. On the ſubject of poor's rates, he confeſſes, that the grievance is now become of a moſt ſerious nature; that, in the whole county, they are five or ſix ſhilings the acre on the pound of the rack rents; and that, in the pariſh of Marſham, they amount to more than what the landholder draws of clear rent.

On the 25th ſection, which treats of the rural economy of Norfolk, we muſt remark, that labour is cheaper in that county than in many of the counties of Scotland. Mowing hay, from one ſhilling to eighteen pence per Engliſh acre, or from fifteen to twenty three pence per Scotiſh acre, is really very moderate: ſo is hoeing turnips twice at ſix ſhillings per acre; and chaff-cutting at three farthings per heaped buſhel. The wages of a head carter, from nine to ten guineas a year; and of an under carter, from five to ſeven guineas, are alſo very moderate in Norfolk.

In the 26th ſection, we have an account of the markets in that county, and were ſurpriſed to find, as a recommendation of public fairs and markets, that they tend to check the increaſe of large farms. Mr Kent has been mounted on his hobby-horſe, when he made this obſervation.

We obſerve with more pleaſure, that his 27th ſection, on *the ſtate of the poor*, is replete both with humanity and good ſenſe. We join with him in recommending ſocial clubs, or, as they are now termed, Friendly Societies; and would alſo recommend to the great ones of the earth, to imitate the example of 'Earl Harcourt, at Nuneham, who, if a poor man puts in a penny into the ſocial box, puts in another; and, if a farmer or tradeſman contributes a ſhilling, alſo adds another.' We would alſo recommend the keeping a cow to married ſervants, and paying them

part

part of their wages in kind, instead of giving them grass land; or giving them wheat at a moderate rate. Here, Norfolk may learn from Scotland.

In the 28th section, *several reprehensible practices* are mentioned. We do not find fault with the *not employing of women and children*, as if they would collect the harvest in a *less slovenly way* than is *done by the men*; though we approve of the humanity of employing women and children, to do any thing that they can execute properly. We do not approve of delaying too long to cut down wheat or any other kind of corn—*medio tutissimus ibis*. We join with Mr Kent, in condemning the careless way of collecting the barley, when cut down; of stacking their corns, and of cutting their hedges: And also join with him against Arthur Young Esquire, in reprobating the practice of burn-baking, except the grass be very coarse and the soil very deep.

In the last section, we regret that the *General Observations* were not more numerous.

On the whole, we have derived much pleasure from reading the Survey of Norfolk. We see some respectable characters among the landholders, many excellent practices among the farmers, which deserve the imitation of other counties; and many important facts stated, and judicious observations made, by the Reporter. We have begged leave to differ from Mr Kent in several instances, where he looks at the agriculture of the kingdom with the eye of a *Norfolk farmer*, rather than that of a careful observer, who makes accurate distinctions between different soils and climates, before he recommends any practice, however good in one county, to universal imitation. His exploding of fallowing, because unnecessary in Norfolk—his recommendation of the broad-cast, in preference to the drill turnip husbandry—and his aversion to large farms, and rather too great attachment to working oxen, in our opinion might as well have been omitted; or, if inserted, might, in several passages, have been softened. But, with a few exceptions, (and who has not his hobby-horse, though that were but an ox?) we acknowledge the general merit of this Report; and that, when the best practices in agriculture are collected from the different reports, a considerable portion of them will be found in Mr Kent's General View of the Agriculture of the County of Norfolk. E. E. H.

Directions

Directions for making Compoſt Dunghills from Peat-Moſs, which have been uſed at Meadowbank, in Mid-Lothian, in raiſing the laſt ſix Crops; and been found to ſtand Cropping, whether by Corn of all ſorts, Hay, Paſture, Tares, and Potatoes, and whether on Loams, Thin Clays, or Gravels, at leaſt equally well with Farm-Yard Dung *.

A PEAT-MOSS being now univerſally acknowledged by men of ſcience, to be no other than a maſs of half-corrupted vegetables, it has become an important object, to find out how this vegetable matter may be reduced to the laſt ſtage of putrefaction. Various methods have, of late, been tried, in this quarter of the iſland, to improve peat-moſſes, or peat-bogs, by draining, levelling, and reducing them to a proper tilth, for bearing crops of cultivated vegetables. It hath been ſuppoſed, that ſuch ſoils may alſo be brought into a general ſtate of putreſcency, by a liberal admixture of quicklime; but this hath not as yet been fully proved, although a great number of ſuch bogs have been, in different ways, converted into excellent arable fields. None can deny the vaſt importance of the object, who conſiders how many hundred thouſand acres of this country remain in the ſtate of a peat-bog. Neither is it of ſmall conſequence to inveſtigate, how the half putrefied vegetable matter of a bog may be converted into dung for other fields.

It hath long been a cuſtom with the generality of farmers, reſiding in the neighbourhood of moſſes, to mix up their dunghills with a conſiderable proportion of peat, to the extent of about a third of the whole; but this does not render the diſcovery of a juſt method of putrefying peat-moſs, by the ſmalleſt poſſible quantity of dung, as ſeems to be unfolded by the directions now under review, leſs conſequential.

This little pamphlet uſhers in the directions for making compounded dunghills of peat, fermented with dung (of which directions, an extract appeared in the laſt Number of this Magazine), with ſome judicious and correct obſervations, concerning the preparation of manure in general, and concerning peat-moſs in particular, which, the author obſerves, has nothing in its ſituation, or in the changes it has undergone, that leads to think, that it has

* Though the above pamphlet has only been circulated among a ſelect number of friends, yet, as it has excited conſiderable attention among ſcientific agriculturiſts, we could not avoid preſenting a review of it. This article is not from our ordinary reviewers; but furniſhed by a gentleman of great abilities, to whom we have, on various occaſions, been under the greateſt obligations. N.

ſuffered in ſuch a way as to unfit it from being prepared for manure.

It hath no doubt been objected by ſome, that peat is incapable of any further proceſs of putrefaction. But this does not ſeem to be warranted from fact: For, by ſubjecting a piece of peat to the heat of a dunghill, it loſes its tenacity, is rendered liable to crumble down into duſt, and is deprived of a great part of its inflammability; which obviouſly ſhow, that it is reduced to the ſame ſtate as ſtraw, or other vegetable matters are, by the influence of heat and moiſture.

In many places of this country, particularly in Lanarkſhire, peat-moſs, properly broke down, is, without any other proceſs, applied as a manure to clay-lands, and for thickening thin ſoils, with evident ſucceſs.

It is ſtated in this pamphlet, that peat, prepared with lime alone, hath not been found to anſwer as a good manure. It is added, lime-water was not found to unite with the tan in peat. In both theſe, the author is certainly miſtaken. Whether peat poſſeſſes any of the tanning principle, the author hath not proved. It is probable, the vegetable matter of the peat is preſerved uncorrupted from the influence of this principle, which the bark of moſt trees and vegetables, as well as the oak, poſſeſſes in ſome degree; yet tan hath not been diſcovered to have any active virtue in detached peat, or moſs-water, with which a fruitleſs attempt to tan leather hath been made. But, whether moſs poſſeſſes the tanning principle, or not, let the author try again to mix a little lime-water with black moſs-water, and he will find, that it will incorporate with the peat matter that is held in ſolution by the water, and fall with it as a ſediment, and leave the water perfectly pure.

Peat, compounded with hot lime, does alſo obviouſly undergo the putrid fermentation, as it thereby, loſing its fibrous texture, is induced to crumble down, and is alſo deprived of its inflammability: And it is well known by many farmers, that, when compounded in this way, the compoſt proves an excellent manure, particularly as a top-dreſſing for graſs lands. *Vide* alſo the laſt Number of this Magazine, p. 365, for a recommendation of a compoſt of lime and peat-earth, by Mr Horridge.

Upon the whole, this pamphlet is well worthy of the attention of all thoſe who have a command of peat-earth. N. J.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Letter from the Reviewer of the Mid-Lothian Survey.

GENTLEMEN,

UNLESS a reviewer is determined to deal in nothing but univerſal undiſtinguiſhing panegyric, he muſt lay his account with ſometimes giving offence; it is, however, his duty to be fair and candid. Merely to have given offence, is an imputation little to be regarded: to be taxed of unfair miſrepreſentation, is a charge of more ſerious import.

This charge I find brought againſt me in your laſt Number, by T. S. of Mid-Lothian. As Mr T. S. has, however, fairly quoted the paſſage of his work to which I alluded, it muſt remain with the public to judge, whether the inference I drew from it was fair or unfair, natural or forced. Mr T. S. has undoubtedly a right to explain his own meaning, in his own way.

It is not uncommon to reconcile incompatibles, in thought, *e. g. cheap leather and dear ſhoes* *. In abſtract ſpeculation, abſurdities will often paſs *incognito*: Of this I find an inſtance in the paſſage of my review, quoted by Mr T. S.; it is in the ſecond ſentence of the quotation, '*whence he would ſeem to infer, that if exportation had* not *been prohibited at theſe ſeaſons, or if importation had been allowed, our own agriculture muſt have gone to ruin.*' It is evident, that (not) renders the ſentence perfectly abſurd. The abſurdity, however, would ſeem equally to have eſcaped the detection both of Mr T. S. and myſelf, however anxiouſly either of us might have wiſhed to have had my paper *corrected*.

Mr T. S. is not ſingular in the opinion, that the corn-law ſyſtem is advantageous: Had it not been deemed ſo, it would never have been adopted. Neither is the reviewer ſingular, in ſuggeſting (as a cauſe that may ſometimes raiſe alarm) *the diminution of the value of the produce of the old cultivated lands, from the competition, in the market, of the produce of waſtes brought into high cultivation.*

In the volume of *Public Characters*, of 1801-1802, in the account of Mr Arthur Young, page 575, is the following obſervation

* A toaſt ſaid to have been propoſed at an election dinner of the borough of Selkirk, by a perſon lately high in office; and to have been drunk with acclamation by the *Sutors*.

vation upon this ſubject: 'Mr Young has repeatedly ſhown to demonſtration, that, from the neceſſary ſlow progreſs of rural improvements, no ſudden or diſproportionate depreciation of the products of the ſoil need be apprehended; yet no reflecting man can be ſo blind, as not to diſcern this low-ſpirited and jealous apprehenſion.'

I acknowledge, I am no more apprehenſive of the fate of the cultivated lands, from the cultivation of the waſtes, than Mr T. S.; though not, I own, preciſely for the ſame reaſons; but rather for the reaſons ſuggeſted by Mr Young, in the forequoted paſſage. Mr T. S. ſeems to think (if I do not miſconceive or miſrepreſent him), that the price of grain, or other farm produce, muſt be determined by the circumſtances under which it is raiſed by the producer, which enable or diſqualify him to afford ſelling it at a certain price; and that the waſtes, when cultivated, being on the ſame footing, and equally affected by every particular affecting the old cultivated lands, the price at which their produce can be afforded, will be no cheaper than what the produce of the old lands can be afforded at. I am inclined, however, rather to be of opinion, that the price is regulated entirely by the proportion of the exiſting ſupply to the demand of the market; and that the ability of the producer to afford, or not to afford, has no effect whatſoever. I much fear, cuſtomers would be badly ſerved, if merchants had it in their power to raiſe prices to that pitch, at which they ſhould judge they could afford to part with their commodity; high or low rents would then be a matter of indifference.

This ſpeculation might be purſued through a detail of particulars; in which, among concomitants, it is diſputable, which is cauſe, and which is effect. For example, is it high rent and high wages that raiſes the price of farm produce? Or, is it the high price of farm produce that occaſions high rents and high wages? I ſhould be pleaſed if Mr T. S., who ſeems to be a man of reflection, would favour the public, through your channel, with his ideas on ſome of theſe complicated ſubjects. I am, &c.

The Reviewer of Mid-Lothian Report.

BRANCH

BRANCH III.

Agricultural Intelligence.

The very favourable weather generally experienced over all the iſland, from the middle of Auguſt to the latter end of September, brought forward the corn crops of every denomination, except in the cold and late diſtricts, in a degree exceeding the expectation of the moſt ſanguine agriculturiſts; and, with a few exceptions, permitted harveſt work to be carried on in the moſt expeditious and ſucceſsful manner. The danger to the wheats, from the prevalence of *ruſt*, ſo much dreaded at the time of our laſt Publication, has only been partially realized; and the imperfect braird made by the barleys, and the conſequent imperfect growth of that grain, was in a great meaſure remedied, by the uncommonly hot ſunny weather which prevailed in the period above mentioned. The oats, in the Low-country diſtricts, were, on the whole, fully ripened, and turn out very productive in the article of meal. From the high diſtricts (and the greateſt part of this grain is ſown in ſuch ſituations), we learn, that conſiderable damage was ſuſtained from ſome froſts, in the firſt and ſecond weeks of September, when the grain had only reached its milky ſtate. This, as juſtly remarked by our Aberdeenſhire correſpondent, ſhould cauſe people ſo ſituated, to be extremely cautious as to the ſeed uſed for next crop; otherwiſe, a ſerious loſs may be ſuſtained from inattention to this important circumſtance.

Another evil, among many bleſſings, accompanied this harveſt; and that was, a ſevere ſhake from a high gale of wind, which generally prevailed over the whole of Britain, on the 10th September, when a very conſiderable part of the crop remained uncut. Many fields of wheat were much injured: upon ſome of them, it was reaſonably ſuppoſed that one fourth of the crop was loſt; and both barley and oats, eſpecially thoſe that were ripe, ſuffered conſiderably. It excited ſurprize, that no notice was taken, at the time of theſe loſſes, in the newſpapers, though the different publiſhers are uſually pretty alert in recording every kind of information reſpecting the crop, even when it is more imperfectly aſcertained. We mention the matter, becauſe an account of the gale, and its conſequences, ſent to one of theſe gentlemen, was refuſed admiſſion into his paper, though ſufficiently authenticated. If a cotton mill is burnt, or a ſhip

wrecked, theſe events, though of partial conſideration, are inſtantly communicated to the public; but if the crop of a farmer is deſtroyed by a furious ſtorm, the matter, in their opinion, is either undeſerving of notice, or ought to be ſuppreſſed, leſt it ſhould have an influence upon the markets, unfavourable to the conſumer!

The grain market has not fluctuated much ſince our laſt, except in the article of wheat, which has lately fallen conſiderably. It would be raſhneſs in the extreme, at this time, to offer any predictions as to prices when thraſhing goes regularly forward; but, from the continued importation, and the temper of foreign markets, it may be preſumed that no great alteration of the preſent rates will ſoon take place. Though the crop, in ſeveral diſtricts, may be eſtimated as fully up to an average of years; yet, in others, the injury ſuſtained, in conſequence of the uncommon backwardneſs of the Summer months, was never removed; and, in theſe diſtricts, the loſs, by froſt and equinoctial ſtorms, will, of courſe, add to the original misfortune. The conſumption of grain, in Britain, is alſo now ſo great, that we have doubts whether the beſt crop will do more than merely ſupply the wants of the inhabitants.

In the articles of cattle and ſheep, the markets have, of late, ſhewn a tendency to decline; but the reduction has not been great. From a ſcarcity of *keep*, ſeveral of the Engliſh markets have not been well attended; but this very circumſtance gives reaſon to ſuſpect, that a greater ſcarcity of fat ſtock will afterwards be felt. At the great Falkirk tryſt, the number of cattle preſented was below what we have uſually ſeen at that important mart; but, at the ſame time, it ſeemed equal to the demand. At the firſt of the market, prices were rather lower than at the September tryſt; but in the afternoon, and ſucceeding day, a difference in favour of the ſeller was aſcertained beyond diſpute. It gave us ſenſible pleaſure to obſerve the ſuperior attention now paid to the improvement of the different breeds; and this improvement may ſtill be increaſed, by beſtowing greater care to provide green food for the young ſtock during the Winter and Spring months.

Many people have, of late, taken an alarm at the emigrations from the Northern diſtricts; which, in our opinion, is altogether unfounded. Granting, for argument's ſake, that many Highlanders have left their native country, it does not follow that the country is poorer or weaker, upon that account. The fact is, that the welfare of the country is promoted thereby; for their ſtay, like the reſidence of paupers in a poor houſe, would have entailed a heavy burthen on the uſeful population. It is pretty certain, that if thoſe people could have procured the neceſſaries of life, in other words, employment at home, they would not have emigrated;

emigrated; therefore, if the country could not ſupport or employ them, it is for the intereſt of all parties that a removal ſhould be made. To ſpeak of confining them at home, without providing employment, would be recommending a meaſure both dangerous and arbitrary. Under exiſting circumſtances, the Highlands, like every country where trade and manufactures are little attended to, muſt neceſſarily, at certain times, be overſtocked with inhabitants. When this is the caſe, the evil will ſoon find its own cure, unleſs reſtrictive meaſures are reſorted to; and, that ſuch would be vain, fooliſh, and oppreſſive, needs not be demonſtrated.

We are extremely glad to ſtate, that the cauſe of agriculture is now to receive the active ſupport of MR PITT; and, of courſe, that his unrivalled abilities will be uſed to promote improvements in the firſt and moſt reſpectable of all arts. The newſpapers inform us, that, to avoid *hypochondriaſis*, he has recently taken a farm, of five hundred acres of land, in Kent; and that he is, from morning to night, employed in ſtudying the theory and practice of agriculture. We give him joy upon the wiſe choice he has made, and bid him *God ſpeed*. Amidſt peaceable, rural avocations, we truſt he will experience a degree of happineſs ſeldom enjoyed by thoſe engaged in the buſtle of political life. His early days were employed in the latter manner; and, from paſt feelings, he will be able to appreciate the ſuperior comforts of a claſs, whoſe attention is conſtantly taken up with purſuits neceſſarily beneficial to mankind. The politician may, and often does, act in oppoſition to the happineſs of his brethren; conſequently ſeldom experiences that peace of mind juſtly deſcribed as 'paſſing all underſtanding.' The agriculturiſt, on the contrary, promotes the welfare of his fellow-creatures; as, without him, they cannot exiſt: therefore, independent of extraneous circumſtances, ſtands a better chance of attaining to the comfortable ſtate above mentioned, without which, the greateſt bleſſings yield but little ſatisfaction.

MR PITT, in retreating to rural life, evidently imitates thoſe great men of Greece and Rome, who took hold of the plough, when they reſigned the helm of the ſtate. Xenophon, in his little farm at Scillus, perhaps benefited his country more, than by bringing home his army of ten thouſand Greeks in ſafety from the Perſian land. In like manner, MR PITT, by deviſing plans for 'making two blades of graſs grow, where only one grew before,' may do more real good, than was done by his political exertions, great as they were, during the long period he preſided over the national councils. A paſſage, applicable to this ſubject, may here be extracted from a paper publiſhed in the Fourth Number of this Magazine (vol. I. p. 382.) A reſpectable correſpondent, (whoſe pen, we regret, has not lately been drawn in our ſupport), in an

inquiry into the proper ſize of farms, after obſerving, 'that it would require a man of conſiderable abilities to manage a farm of 300 acres in tillage,' very judiciouſly declares, 'that were the vaſt abilities of a *Fox* or a *Pitt* to be concentred on agriculture, with an inclination to the profeſſion, they could, with eaſe, manage a farm of ten times the extent.' As this is preciſely our opinion, we truſt and expect, that now, when the latter gentleman has taken to the plough, his great talents will be devoted to the improvement of a ſcience, in the proſperity of which all ranks and degrees of men are eminently intereſted: Then every man will concur with us in declaring, that he has deſerved well of his country.

A liſt of premiums offered by the Farming Society of Ireland (whereof the Right Honourable John Forſter, late Speaker of the Houſe of Commons, is Preſident), has been handed to us; but we are extremely ſorry that it is altogther out of our power to give it a place. To make the active operations of this Society generally known, it may be ſufficient to ſtate, that at the *Balinaſloe ſhew*, the following premiums were to be diſtributed—The ſum of four hundred and ſeventy-five pounds among the expoſers of bulls, cows and heifers, of the long-horned, Hereford, North Devon, Suſſex, and ſhort-horned breeds; and a gold medal for the beſt bull; the ſame for the beſt cow of all ages and breeds; the ſum of eighty pounds for the two beſt rams, and the two beſt pens of ewes, of the long, or combing-wool breeds; and the like ſum for rams and ewes carrying ſhort, or clothing-wool; a gold medal for the beſt ram and ewe, of any age or breed; ſixty pounds for the beſt ſix boars and ſows, from ſix months to three years of age; forty-five pounds to the beſt ſix ploughmen who ſhall plough half a rood of land in one hour with horſes or oxen; and forty pounds for the beſt plough and harrows.—At the *Dublin ſhew* for neat cattle, ninety pounds and a gold medal are to be diſtributed among the candidates who produce the beſt oxen, heifers and cows, conformable to the Society's rules; twenty pounds, and the gold medal, for the beſt wedder ſheep; and thirty pounds, and the gold medal, for the beſt ſwine. Three gold medals are alſo offered for the beſt eſſays on the ſeveral properties of neat cattle, ſheep, and ſwine; the comparative value of wool, and the manner of ſorting it; and on the management and cultivation of green crops: A ſilver medal for the beſt liſt of premiums to be offered by the Society for the year 1803.

On the whole, we are at a loſs, whether the liberality of the Society, or the wiſe and judicious manner in which theſe premiums are offered, deſerves the greateſt commendation. Their exertions far exceed any thing that has been attempted in this country;

country; and the conditions under which the premiums are offered, the inſtructions to the judges appointed to determine them, and the rules or regulations marked out for the government of all concerned, ſufficiently demonſtrate, that the whole arrangement has been conducted by perſons of ſcience and buſineſs. Moſt cordially we wiſh ſucceſs to this patriotic Society. The field they have to improve is wild and extenſive; but their efforts, if continued, muſt cauſe the agriculture of Ireland progreſſively to improve. Much remains to be done in that iſland; but we are free to ſay, that its trueſt intereſts cannot be better advanced, than by ſupporting and encouraging the meaſures of a Society, to whom the Iriſh nation lye under the greateſt obligations.——*Oct.* 22. N.

EXTRACTS FROM PRIVATE CORRESPONDENCE.

SCOTLAND.

Aberdeenſhire Quarterly Report, No. 1.

The crop in this county ſuffered conſiderable injury, by a very ſevere wind on Friday the 10th, and by a ſmart froſt on the night of the 13th of September. The wind did great injury to ſuch of the barley fields as were not quite ripe, and to the oats which were fully ripe, or liable to be ſhaken. The crop, on the whole, is much inferior to that of laſt year. The barley, where it was early, is well filled; the oats, in general, not ſo well. Potatoes are not nearly ſo dry as laſt year; and very few apples have been found on the ſtalks, which is a proof of the imperfect ripening of this valuable root. Turnips are a tolerable crop. There is not much wheat raiſed in this county; and, where any of our wheat fields were late, they have ſuffered much from the froſt above mentioned. The late ſown peas and beans have alſo been injured by the ſame cauſe. Conſidering the great quantity of old grain, we will have a ſufficient ſupply for a year; though we cannot expect to export much. There is ſome riſk, in the later parts of the county, of froſted oats being uſed as ſeed next Spring; for, wherever the oats were in the flower, or in the early ſtage of the milky ſtate, they have ſuffered by the froſt. There is, however, no reaſon for exciting any alarm of a deficiency of this crop; though it will no doubt be prudent, to warn many of our farmers to ſow none but ſeed that was ripe, or nearly ripe, before the froſt ſet in.——*Oct.* 12.

Letter from a Gentleman near Perth, October 13.

'Harveſt was about finiſhed in the lower parts of this county, in the end of laſt week; although ſome corns are ſtill to cut on the hills.

In my humble opinion, the grain crop, in this quarter of Perthſhire, made but little improvement in quality, after the ſevere froſts which we had

had early in September. Their effects were moſt deſtructive indeed; to the late barleys in particular; and more or leſs hurtful to all the different ſpecies of grain, nearly in proportion to the ſtate of ripening that the varieties happened to be in when the froſt attacked them; the more forward ſuffering only little, in compariſon with the other. It is well known to many of your friends, and I had ſome particular reaſons for obſerving it, in this inſtance of ſevere froſt, that late crops, in elevated ſituations, ſuffered much leſs injury, than ſimilar crops in low lying places; and, from this obſervation, (though a very common one), I am much inclined to ſuggeſt the propriety of early ſowing to all thoſe who have grounds in low ſituations; which, for the moſt part, might be eaſily attended to, and great good would often be gained from it.

Wheat of this crop, appears to me very far under an average, in point of quality, the greater part of it having been much blighted; and, in many fields, a conſiderable proportion of ſmutted ears were diſcernible. Although, in general, this part of the crop bulks well, yet it is obvious, from theſe cauſes, that the quantity muſt, like the quality, fall greatly ſhort of laſt year's; at the ſame time, notwithſtanding the weak quality of this ſpecies of grain, I am happy in obſerving a very good braird ſpringing up on the firſt ſown fallows.

Barley is variable in quality; the more early fields are good, while the late ſowings are, in general, poor ſtuff indeed. On the whole, I think the quantity conſiderable, and, in my opinion, not leſs than that of laſt year.

Oats are indifferent in quality; from the trials made at mill, five firlots have gone to give one boll meal. In this neighbourhood we had very violent guſts of wind laſt week, which did irreparable damage to ſuch oat fields as were then ſtanding. From all my obſervation, I am induced to think the oat crop, alſo, much under the quantity of laſt ſeaſon, and even under an average crop.

Peas are, for the moſt part, a bad crop indeed. On the other hand, turnips are remarkably good; from which, together with the great plenty of fodder, I ſhould ſuppoſe cattle would ſtill continue to command the high prices they have done during the Summer. Potatoes, too, are a good crop, although their tops were quite cut off by the froſt above noticed: But, ſo far as I can judge, the roots ſuffered little, if any, injury therefrom.

The demand for the remains of laſt crop, increaſed to the cloſe of the market. As yet, few ſales have been made of new grain; a little wheat for ſeed excepted: Prices from 35s. to 40s. per boll.

Argyleſhire Quarterly Report.

The ſtate of the harveſt, in this part of the country, is far from what could be wiſhed. The crops, battered with almoſt conſtant rains during the harveſt, were lodged early wherever they were heavy, and prevented from ripening or filling; and the lighter fields were terribly ſhaken by the late high gales of wind. Much of the oat crop remains yet to be cut down, though many fields were cut before they were fully

ripe,

ripe. But the great difficulty is to get the corn dried after it is cut, as the weather hitherto has been almoſt conſtantly wet ſince the harveſt began, except the laſt ten days of September, in which there was a good deal of dry wind. As the weather now begins to aſſume a ſettled appearance, it is hoped the concluſion of the harveſt will be the beſt; but there is every reaſon to fear, that though the crop may have its ordinary bulk, it will be very deficient in grain, and ſtill more in meal. In theſe circumſtances, it is pleaſing to hear good accounts of the crop, and of the harveſt, from other parts of the kingdom; as we ſhall not want, while they abound.

The price of cattle is conſiderably fallen of late, though ſtill enormouſly high. For ſome time, buyers ſeemed to ſtickle at no price; but many of them having been obliged lately to ſell lower than they bought, came to find, that in buying cattle, as in other matters, there is a *ne plus ultra*; and they are now become a little more cautious. From 10l. to 12l. was no uncommon price, during this ſeaſon, for three-year old cattle; and from 25s. to 27s. for wedders. When all the conſequent expences are added to this prime coſt, the price of butcher meat muſt come ſo high to the conſumer, that the labouring claſs of mankind, who make the largeſt number, will, in a great meaſure, abſtain from it. This will probably help to bring the article to its level. At preſent, the diſproportion between butcher meat and meal, is altogether unprecedented.

If the price of cattle has riſen to an enormous height, the rent of lands has riſen more than in proportion. It would appear that both landlords and tenants preſume upon the ſame progreſſive riſe, in time to come, that has taken place in times paſt; as many grazings are now let at three or four times the rent which they paid during the currency of expired, or expiring leaſes. Policies of inſurance are now opened almoſt for every thing. Would it not be a very proper thing for tenants to try if any would inſure the preſent prices of cattle during the continuance of leaſes, which they take on the faith of the prices ſtanding to what they are at preſent? Perhaps, in ſuch caſes, the landlords ought to be the underwriters, and that on a very moderate premium of inſurance. But, as I profeſs myſelf unqualified to purſue this hint, I leave it to ſome of your ableſt correſpondents.

As ſome of our legiſlators may probably read your uſeful Magazine, it may not be amiſs to mention an evil that exiſts in a great part of this county, and loudly calls for their attention. By a very injudicious arrangement, a great part of this county was claſſed with the Low-country diſtricts in the diſtilling act. The conſequence is, that as we have neither capital nor grain for diſtilling on a large ſcale, as in the Low-country, the grain is uſed by ſmugglers, and a loſs of at leaſt 12,000l. per annum ſuſtained by the revenue. What we chooſe to ſpare of the liquor, finds its way to the Low-country, as much as when we were allowed to diſtil legally with ſmall ſtills; ſo that the loſs to our morals, to our circumſtances, and to the public revenue, is of no advantage to our neighbours.——*Oct.* 14.

Tweeddale

Tweeddale Quarterly Report.

Owing to the ſeverity of the froſt in May, and the continued coldneſs of the Summer months, the grain crops were much later than laſt year, and little harveſt-work was performed till after the middle of September. In the firſt week of that month, ſevere froſts prevailed for two or three nights, which blaſted the pea and potato crops, except where placed in high ſituations; injured the barleys conſiderably, and rendered the oats very ſmall in the grain, even when apparently ripe. The fine weather which ſucceeded, permitted the peas to be cut up, and harveſted in good condition. In reſpect of fodder, they will afford a full ſupply; but as to grain, a very ſmall return can be expected.

October commenced with a ſudden change of weather; and the paſt eight days have been no leſs bluſtering, than the former three weeks were uncommonly ſerene and mild. The exceſſive high winds have cauſed conſiderable damage, as two thirds of the oat crop remained uncut. The weather has now ſet in very wet, which occaſions harveſt-work to go on very poorly. Few oats are as yet got into the yard; many fields are ſtill to cut; and though, when gathered together, the yards may be tolerably filled, yet, from the circumſtances ſtated, few crops probably have been found more unproductive in this county, than the preſent one threatens to be.

The potatoes have made little progreſs ſince they were ſmitten with the froſt, which appears to have produced exactly the ſame effect as if the ſtalk had been cut over; a practice that few will approve of, who have fairly tried the experiment. Turnips brairded well, but their aftergrowth has not been great. They are inferior to laſt year's crop, and even to an average one. The aftermath and paſtures continue good, and afford ſufficient food for the live ſtock. Lean ſheep, for wintering and feeding, are both ſcarce and high-priced, and the demand for horſes is very briſk.

Since the froſt, few people are inclined to diſpoſe of the old grain which remained on hand, a great ſuſpicion being entertained that little of this crop is fit for ſowing. The quantity of new grain mealed or marketed, is very trifling; conſequently, nothing can be ſtated reſpecting prices at this time.——*Oct.* 14.

Roſs-ſhire Quarterly Report.

The weather has continued wet and cold ſince laſt report; conſequently, our harveſt is very late, and, in the high grounds, the corns are not nearly ripened. Shearing is now, however, general, as, from the late froſts, there are no hopes of the grain, in ſuch ſituations, coming to perfection. Even on the ſea-coaſt, there is but little corn ſtacked, and much remains uncut. Potatoes are not at all a promiſing crop; and, upon the whole, our proſpects would be more gloomy than they were in Autumn 1799, did we not look for a liberal ſupply from our more fortunate neighbours.

Cattle and ſheep ſtill maintain the late prices. Beef and mutton from 6d.

6d. to 7d. per lib. Dutch weight. Oat meal from 20s. to 21s. per nine ſtones, and looking up. Barley from 25s. to 30s.; but there is little of any kind of grain in the market.——*Oct.* 14.

Aberdeenſhire Quarterly Report, No. 2.

Throughout the whole of Auguſt, we had very fine weather, and every article came forward as well as could be wiſhed. September ſet in with ſtorms of rain, ſnow, and wind, which threatened to deſtroy every kind of crop on the ground. In many fields, the barley was more or leſs ſhaken; and, in ſeveral places, the oats were hurt by a froſt which ſucceeded the ſtorm. Since the 18th September, the weather has, on the whole, been very fine, and much good has been derived from it. The crop has thereby ripened far better than could have been expected; and harveſt has come forward very rapidly. In ſome places, the ſhearing is entirely over; and, in general, more than the half of the oats are already cut. Barley will be a fair average crop. Oats are ſufficiently bulky; but, in many caſes, deficient in quality. Peas are next to nothing, except with reſpect to ſtraw, being late, and generally froſted. We can quote no prices juſt now, ſales not having commenced. Potatoes are but an indifferent crop, and of an inferior quality, being hurt by the early froſts. Turnips have not rooted ſo well as in ſeveral years paſt. The aftermath and paſtures are in great abundance. Cattle and ſheep have maintained the laſt year's prices fully; and the quantity remaining on hand, for wintering, is not greater, perhaps not equal to that of laſt year's. Wages for every kind of work remain very high.——*Oct.* 14.

Morayſhire Quarterly Report.

Since the July report was written, the crop, in this diſtrict, has mended beyond what could have reaſonably been expected at that period.

Oats, although not ſo weighty as laſt year, are ſtill of very tolerable quality; bulk well; and will do conſiderably more than ſupply the wants of the county, if ſtacked in good condition, which, at preſent, there is every proſpect of, one third being already in the yard, and the weather remarkably fine.

Barley, as to quantity and quality, may now be reckoned an average crop. It is moſtly ſtacked in good order, and will malt pretty well.

Wheat ſeems more defective than either of the two former grains, and will be found inferior, in quality and quantity, to laſt year's crop. Much of it is extremely ill filled, eſpecially on moiſt, rich land. The ſowing of that grain is already commenced, and ſupplies of Eſſex ſeed have been brought to the country; the moſt attentive farmers generally making it a rule, to ſow, annually, a quantity newly imported, the produce of which may be equal to what they may want for their wheat ground next ſeaſon—a practice, from which great benefit has been derived. There is, yet, no ſales of new grain made, and little doing in old, of which there is ſtill ſome quantity on hand.

Fodder

Fodder will be plenty. Cattle continue in demand, and at very high prices.

An account of the drainage of the lochs of Leuchars and Cotts, in this county, being lately ſent for inſertion in the Farmer's Magazine, (*vide* p. 453.), it is proper to add, that there is the beſt-grounded hopes for ſuppoſing, that the Noble proprietor, who is well known to promote and patronize whatever is for the good of the country, and to whom belongs nearly the whole lands on each ſide of the river Loſſie, is in danger of being inundated, will ſoon give orders for having the banks thereof thoroughly repaired, or made new, which will be of immenſe advantage to his property in that ſituation.——*Oct.* 14.

Wigtonſhire Quarterly Report.

The weather, during the laſt quarter, has, in general, been favourable for the purpoſes of huſbandry; and, conſequently, the crop has turned out much better than, during the Summer ſeaſon, we had reaſon to expect. The oats and bear, on light ſoils, that were in full heart, are exceeding good. On deep loam, theſe crops are too luxuriant, which will make the quality of the grain rather inferior to that of laſt year's growth. The potato-oats, and red-oats, on deep ſoils, have ſtood the rains much better than any other kind. Wheats, on deep ſoils, are very bulky; but, owing to the moiſt weather about the time they were in bloſſom, mildew is very prevalent. The quality is therefore imperfect; and, on light ſoils, the grain is much infected with ſmut.

Harveſt, excepting in the moorland diſtricts, is nearly cloſed; and the ſeaſon, in general, has been excellent, both for cutting down and ingathering, excepting during ſome high winds, which, in particular ſituations, did conſiderable damage. On the morning of the 11th of laſt month, the wind was accompanied with a partial ſhower of hail. Where this fell, the potato-oats and bear ſuffered much.

Potatoes do not promiſe to be productive. The froſt cut up the ſtems, and made the bloſſoms wither away; inſomuch, that an apple or ſeed-pod can hardly be found on them. The ſucceeding warm weather brought on a ſecond growth; but it was too late to bring this valuable root to maturity. The turnips are, in general, healthy and vigorous, and promiſe to yield a full crop. But, in ſome ſituations, the roota baga, or Swediſh turnip, are ſhooting. Is this a fault in the ſeed, or from *too early* ſowing?

The market for new grain has not yet commenced; but, on account of the vaſt Iriſh importation, and ſtock of old corn on hand, purchaſers keep off, and talk of very low prices.

The Engliſh market being rather overſtocked with Iriſh bullocks, prices of Galloway cattle are on the decline, at leaſt the dealers would fain make us believe ſo.——*Oct.* 15.

Letter from a Gentleman in Tweeddale, October 15.

The wind on 21ſt Auguſt ſhaked our half ripe bear very much; and, on the 24th, we had a ſtorm of wind and rain, which did conſiderable damage.

damage. Froſt ſet in on Sunday night, September 5th, and was very ſevere on the evening of the 7th; and, to judge by its effects on the crop, was ſtill more violent on the 13th; though, perhaps, the ſuperior effects may be conſidered as merely illuſtrative of the ſaying, of *a hurt head being eaſily broken.* On the 14th, the warmeſt weather ſet in, that we remember of having felt at that ſeaſon of the year, which continued till the 3d of October, when it became cold and tempeſtuous.

The froſt has completely rendered unfit for ſeed, the whole of the beſt corns growing low, near waters and ſwamps, through this county. The hill land fields, which, at the time of the froſt, were as green as leeks, ripened in conſequence of the extraordinary warm weather that followed; but conſiderable loſs, by ſhaking, has been ſuſtained in theſe places. The froſt, this year, was earlier than uſual, and of greater ſeverity; but, I do believe, the ripening, beyond expectation, of the green hill oats, has compenſated all the damage done by the froſt to our crops on croft land in lower ſituations.

Inverneſſſhire Quarterly Report.

During an average of ten years, the harveſt has been as early in the immediate vicinity of Inverneſs, as in the county of Eaſt-Lothian; but, this ſeaſon, we are at leaſt a month behind, which, of courſe expoſes us to various loſſes, and a great deal of extraordinary trouble. After the 13th September, we had uncommon fine weather for twenty days; and it is believed, that this diſtrict was favoured with more ſunſhine, in that period, than through the whole Summer, which, in fact, was the wetteſt remembered. At this day, not more than one half of the crop is cut down, and hardly a third part is got into the ſtack-yard. Owing to harveſt work being in this backward ſtate, it is difficult to ſpeak with any degree of preciſion, reſpecting the comparative value of the crop with thoſe of other years; but, if good weather continues for two or three weeks longer, it may be reported, on the whole, as equal to our uſual average. Turnips, in ſeveral places, are a poor crop: the frequent rains in Summer prevented them from being ſufficiently cleaned; and the ſame remark is applicable to potatoes, a root upon which the inhabitants of this northern part of the iſland greatly depend. No grain is yet ſold at a fixed price. Hay is 1s. per ſtone. Potatoes, 16s. per boll. Beef and mutton, 6d. to 8d. per lib., and not likely to be lower. Live ſtock bring prices exceeding every precedent. Indeed, the country is much drained of that article.

Information received from Caithneſs ſtates, that the harveſt is ſtill later in that country than with us, and that the crop is but an indifferent one.——*Oct.* 15.

Letter from the Rev. Mr Findlater, containing an Experiment on Scooping Potatoes.

From the diſcordant accounts of the reſults of this practice in your Magazine, I was inclined to believe, that its failure, in my experiment of laſt year, might be owing to the bruiſing of the ſubſtance of the part ſcooped

ſcooped out, in its being forced into the contraction of the hemiſpherical ſcoop: I was alſo led to conceive, that an analogy might ſubſiſt betwixt the growth of potatoes and of oats; in ſo far as, that the ſame thing might take place in the compariſon of the growth of larger ſets, to that of ſcoopings, which we have obſerved here to take place in the compariſon of the growth of oats from well-maturated ſeed, to that from more ſtarveling ſeed—an experiment, which fell under our obſervation more particularly in the ſeaſons 1783 and 1800; in which years, the preceding bad crops made us have recourſe, for the greater part of our ſeed, to countries of ſuperior climate. In the blade, during the time the plant may have been ſuppoſed to draw its nouriſhment ſolely from the mother grain, the crop from ſeed of a ſuperior quality got greatly the ſtart of that from our own leſs maturated ſeed: After being *weaned*, however, if you will allow the expreſſion, when both kinds of plants had equally to depend for their nouriſhment upon the foraging of their roots in the ſoil, that from our native more ſtarveling ſeed recovered its loſt ground; ſo that, at harveſt, if any difference was ſtill diſcovarable, it was in no ſhape equal to what the difference in the blade would have indicated.

I determined, therefore, to repeat the experiment as accurately as poſſible.

I procured a ſcoop in form of an open ring, one inch in diameter at the cutting-mouth; the diameter of the opening on the other ſide being three fourths of an inch.

I took twenty potatoes, as equal as could be judged by the eye: I put them, ten and ten, into oppoſite ſcales, and interchanged them till I got ten and ten of exactly equal weight. I ſcooped ten, weighing juſt 70 oz.; I got 70 ſcoopings, and the reverſion of potato ſubſtance, ſaved, weighed 52 oz. I cut the other ten ſo as to leave no reverſion, and had 76 ſets.

My field for my potato crop had been dunged laſt Martinmas: After it was ridged in order to be planted, I ſelected a ſpot of equal ſoil; and, upon the 15th April, I planted it with my ſcoops and cuttings, which had been drying from the 7th of the month; planting, drill about, three drills of each. The length of each drill was preciſely ſixteen feet eight inches; which allowed the ſets to be about eight inches aſunder in the drill. Though there were 70 ſcoopings, and 76 cuttings, I planted the whole of each in their allotted drills. The drills being 30 inches aſunder, the ſpace occupied by each kind was juſt 16½ feet, by 7½ feet—or preciſely 4⅞ yards—or nearly the 137th part of an acre Scots.

The ſcoopings came up quite dwarfiſh, in compariſon; as in my experiment of laſt ſeaſon.

This 15th October, I raiſed both, and weighed them ſeparately; when the produce of the ſcoops was found to be 20½ lib. Engliſh; and and that of the cuttings, 46¼ lib. ditto.

As each occupied the 137th part of a Scots acre, the amount of the experiment is, that, upon an acre, the ſcoops would have given a return of

of 140½ pecks, or 8¼ bolls; and the cuttings, of 19¾ bolls—both, to be ſure, miſerable crops. The ſaving of ſeed, at planting, upon the ſcoops, was, with me, per acre, at the rate of 22¼ pecks nearly; but the loſs at raiſing, per ditto, was at the rate of 11 bolls, or 176 pecks.

Captain M'Kay of Scotſtown, Mr M'Kenzie of Dolphington, and Mr Loch of Rachan, had all inſtituted experiments of ſcooping this ſeaſon: The two former which I ſaw, and the latter which I heard of, were all dwarfiſh, during growth, like my own.

I had commenced an experiment on bloſſoms; but the winds in the latter end of Auguſt deſtroyed all the bloſſoms together. I am, &c.

Manſe of Newlands, CHAS. FINDLATER.
15th Oct. 1802.

Fife Quarterly Report.

HARVEST did not commence in this county till September, and was not general till the 20th of that month. The rains, about the end of Auguſt, lodged much of the crop, and retarded the harveſt conſiderably. Cold froſty nights, in the firſt week of September, eſſentially injured the peas, and prevented their filling; alſo deſtroyed the potato plants, whole fields being thereby quite withered. The wheat alſo ſuffered—whether from the froſt, or the high winds deſtroying the farina, farmers are not agreed; but many fields of it changed colour—turned black, inſtead of yellow; and much of the grain, when examined, was found ſhrivelled, or what is here termed blaſted, or mildewed. In ſome fields, a good deal of ſmut alſo prevailed; and, what is remarkable, ſeveral fields, receiving the ſame treatment, as to ſeed, labour, pickling, &c. were found ſmutty on one ſide; while the reſt of the field remained uninfected: Sometimes, a head-rig only was ſmutted, and the reſt of the field ſcarcely at all hurt. Upon the whole, wheat is, perhaps, inferior to laſt year's crop, in this county, not leſs than one fourth.

Oats are everywhere a bulky crop; and although much laid down before harveſt, yet, for theſe three weeks paſt, the weather being uncommonly fine, thoſe, that were lodged, not only ripened, but were cut down perfectly dry: the worſt dried immediately after cutting: and a very ſhort time will fit the whole of them for the ſtack, if good weather continues. In one week more, the harveſt will be concluded, even on the lateſt farms; and two weeks of dry weather will almoſt bring the whole crop into the ſtack-yards. If Providence ſhall ſo far favour us, the crop of oats will not fall ſhort of laſt year's produce; for, though a part will not meal equal to it, yet the number of bolls of oats will be ſuperior to laſt year, and the quantity of meal about equal to it.

Barley crop—not equal in quality to that of laſt year, being ſmaller in the grain, though the number of bolls is perhaps equal to what was then reaped.

Peas and Beans—a great bulk of ſtraw, but the grain very poorly filled, and not equal to one fourth part of laſt year's crop.

Potatoes—inferior to laſt year about one fifth.

Turnip—univerſally a fine crop.

Hay—a light crop, and inferior in quality to laſt year: much of it was ſpoiled with rain in winning: the abundance of other fodder alone kept the price low, viz. from 4d. to 5½d. per ſtone (tron weight), according to quality.

Flax—a very indifferent crop: the ſeed this ſeaſon of poor quality; and the quantity ſaved for the oil mills, not one fourth of laſt year's produce.

The weather uncommonly favourable for new ſown wheats, as well as for the previous preparation of the ground for that crop.

The young clovers look remarkably well, and very thick.

Upon the whole, the crops in Fife are much better than could have been expected, conſidering the backwardneſs of the Summer, and that the Harveſt was a late one. There is every reaſon to conclude, that there is no danger of ſcarcity of food for man or beaſt, even if a ſingle boll ſhould not be imported.

There is full employment for every man able and willing to work, whether labourers, artizans, or manufacturers; the average wages 1s. 6d. per day, and the price of oat meal 1s. 1d. to 1s. 2d. per peck; ſo that any man can with eaſe earn even more than a peck of meal per day, which it is generally admitted he ſhould be able to do, ſo as he and his family may be comfortably maintained.——*October* 17.

Letter from Glaſgow, 18th October.

'In giving a ſtate of the crop, and of the harveſt, in this quarter, we muſt obſerve, that, before the latter end of laſt week, a ſmall part had only been got into the ſtack-yard, and a great part of it remained uncut; but, if the favourable weather, at preſent ſet in, ſhould continue two or three weeks longer, we think a great part of the crop in this quarter may be ſecured by that time.

'Wheat this ſeaſon will be but a poor crop, in the neighbourhood; and what ſamples of that grain we have as yet ſeen, are very poor and ill-coloured.

'Barley is ſaid to be a bulky crop; but, from the cold wet ſeaſon experienced, we cannot think it will be fine in quality. Oats in general will turn out better than was expected, ſhould the weather keep good till they are ſecured.

'Beans and peas are a very bad crop with us: they have grown all to ſtraw; and, from the lateneſs of the ſeaſon, and the green ſtate in which they continue, without very fine weather, they will be of little uſe.

'The potato crop, both as to quantity and quality, is far deficient this year.

'Our importations, for theſe laſt three months, into Clyde, have been very conſiderable: From Ireland, we have had about 40,000 bolls oats, 750 tons oat meal, 2000 bolls wheat, and 1000 bolls barley: From America, about 45,000 bolls wheat, and 6000 barrels of flour. Our preſent prices of grain, are as under:

'State

'State of Glaſgow Markets, October 18th.

'American Wheat	32s. to 34s.	*p.* boll of 240 lib.	
Dantzic ditto	34s. to 36s.	do. Linlithgow meaſure.	
Britiſh ditto	36s. to 37s.	do. do.	do.
Ditto Barley	23s. to 25s.	do. Stirling	do.
Ditto Beans	22s. to 24s.	do. do.	do.
Ditto Oats	15s. to 17s.	do. do.	do.
Iriſh ditto	16s. to 18s. 6d.	do. Renfrew	do.
Oat Meal	18s. to 19s.	do.—Retail price, 1s. 2d. to 1s. 3d. *p.* peck.	
American flour	37s. to 39s.	*p.* barrel of 196 lib.	
Britiſh ditto, fine,	54s. to 56s.	ſack of 2½ cwt.'	

Eaſt Lothian Quarterly Report.

From the general goodneſs of the weather during the harveſt months, the operations of reaping and ingathering the crop were carried forward with ſingular diſpatch. The ſcarcity of hands at the outſet, indeed, increaſed wages much beyond their uſual rates; but the additional expence was in a great meaſure compenſated, by the favourable circumſtances under which the work was executed. In an extenſive corn farm, it was found, that each acre required ſomething more than eight ſhearers to cut it; the wages of whom were 18½d. on an average. If to this is added 8d. per day, the ſuppoſed expence of victuals, then the charge of cutting each acre amounted to 18s. or thereby. Taking into account an allowance for leading, ſtacking, and covering the crop, the whole expence may probably be ſtated at 23s. per Scots acre. The crop alluded to was pretty weighty; and wheat formed a conſiderable part of it.

When our laſt Report was preſented, great apprehenſions were entertained, that the wheats would ſuffer from the ruſt, or oaker, which was then ſpreading faſt. Except upon the woolly-eared varieties; or in particular ſituations, little injury, however, has been ſuſtained. This kind of wheat, though the beſt in a dry ſeaſon, is now getting out of faſhion, great loſſes having been felt from its aptneſs to mildew, when wet or foggy weather prevails, before it is completely filled. The thin-chaffed wheats, which are not ſo eaſily affected, are therefore now generally ſown; and, this year, they prove very productive as to quantity, and nearly equal in quality to what is raiſed in the moſt favourable ſeaſons.

The great degree of heat in the months of Auguſt and September, brought forward the barleys and oats with rapidity, and occaſioned them to be earlier harveſted, than previous circumſtances warranted us to expect. The newly introduced variety of oats promiſes to be ſingularly beneficial, as not leſs than 19½ pecks, or 9 ſtone 12 lib. of good meal, per boll of oats, has been gained from ſome which were thraſhed from the ſtook. Oats, in the upland diſtrict of the county, ſuffered much from high winds; and even in the low diſtrict, a furious ſtorm on the 10th September, from the weſterly points, ſhaked ſeveral fields of wheat and oats moſt ſeverely. A great part of the peas and beans

are ſtill in the field. Theſe articles are bulky; but the beſt that can be ſaid of the peas is, that they will furniſh a larger ſupply for the *dung-hill*, than the *granary*.

Turnips have a full appearance on the ground, though in few inſtances of a large ſize. A mildew has lately got upon them, which will effectually ſtop their growth, and render them leſs valuable in the Spring. The ſecond crop of clover was good, and proved eminently uſeful to the working ſtock. Potatoes are equal to an average of years; and, from the dryneſs of the weather, promiſe to be mellow and nutritive. Paſture graſs has been pretty good through the Autumn months; but the breadth of ground ſo occupied, is inconſiderable in this county.

Markets, both for grain and cattle, have remained tolerably ſteady during the quarter; and the demand for the former, with a few exceptions, has been equal to what was preſented. In the two preceding markets, the quantity of wheat ſhown, exceeded what was wanted; therefore, a depreſſion naturally occurred in the ſale of that article. In other grains, little alteration of price has been felt for ſeveral weeks.

A conſiderable quantity of wheat is ſown, and ſeveral fields are already fully brairded. Upon all thin lands, which have been Summer-fallowed, it is aſcertained, that an early ſowing is moſt expedient, it being found, from experience, that ſuch ſoils, if they get thoroughly wet at the *end of September*, ſeldom can be ſown with advantage for that ſeaſon. Beſides, it is neceſſary that wheat, upon thin, and even on clay ſoils of all deſcriptions, ſhould be well-rooted before Winter ſeriouſly commences, otherwiſe it is unable to ſtand the ſevere black froſts often experienced.

Before concluding this Report, it may be ſtated, that part of a field of fallow-wheat, on ſtrong red clay ſoil, was ſo luxuriant, as to induce the poſſeſſor to cut about an acre of it with the ſcythe, in the firſt week of May, at which time it was very nearly in the ſhort blade. Part of the ground was then run off into drills, with a ſmall turnip plough, in order to give the plants air; and the remainder was allowed to ſtand, as left by the ſcythe. The ſtorm of froſt and ſnow which immediately followed, occaſioned the plants to aſſume a yellowiſh hue; and little progreſs was made in their growth, till the fine genial rains in the beginning of June, when the whole puſhed away with the greateſt vigour. About the latter end of July, the crop, which was heavy, got into ear, and was cut on the 27th September, perfectly ripened. The grain is far from being of bad quality, particularly that on the part run off into drills. It is not yet thraſhed, but promiſes to turn out equal to an average; whereas, if the original crop had been ſuffered to remain, the probability was, that it would have rotted on the ground, much of it being lodged, even at the time the ſcythe was applied.——*Ob.* 18.

Mid-Lothian Quarterly Report.

The Harveſt, upon the whole, has been favourable, and the crops got into the ſtack-yards in a very healthy ſtate. A good many fields of Beans

are

are ſtill out, and a few fields of Barley are to be obſerved in the ſtook: the latter circumſtance is chiefly owing to a notion which the growers entertain, that a certain week in May is the beſt ſeaſon for ſowing barley. In the hilly diſtrict of the county, there are ſtill a good deal to reap, and not very much got in.

There have been two ſhakes during Harveſt; the firſt on the 10th of September, which affected the low and middle diſtricts of the county; the ſecond, which affected the high part of it, was on the 5th current. Neither of them were general, but very effectual where they took place.

Wheats of the velvet-chaff kinds, are almoſt univerſally affected with blight and the yellow ſmut, and, in many inſtances, alſo with the black ſmut. Where this is the caſe, they are not only coarſe in quality, but from two to four bolls per acre deficient in quantity. This takes place in every cold, wet ſeaſon, when accompanied with high winds; and ſo frequent a recurrence of theſe, renders it an object of great importance to the grower, to be careful in the ſelection of proper ſeed; for it is a fact completely aſcertained, that ſome ſpecies of wheat are much more liable to diſeaſes of every kind, and much more eaſily ſhaked, than other kinds are: Neither will getting ſeed wheat from the beſt counties in England prove an antidote againſt the evils here complained of, unleſs, by accident, it ſhould happen to be of the hardy, firm, ſmooth-chaffed kind.

Peas have run too much to ſtraw, and, in general, will be unproductive. Beans are much better. Barley and Oats are expected to turn out fully an average crop, unleſs in high ſituations. In the Moorlands, Oats (the chief grain raiſed) are 20 *per cent.* inferior, both in quantity and quality, to laſt year's. Potatoes are by no means, in general, good. The ſame may be ſaid of the Turnip crop.

Where the ſoil is dry and deep, the crop is excellent; but, where it is in any degree thin, and inclined to wetneſs, it is quite otherwiſe.

Upon the whole, the crops everywhere are much more bulky than uſual, but are not expected to be proportionally prolific: and, although there will not be ſuch an overflowing abundance, as a ſtranger, travelling through the county, would ſuggeſt, yet it is expected there will be plenty, and prices not unreaſonable.

The wheat land has, hitherto, been ploughed and ſowed in excellent order; a conſiderable proportion of it has been put in; and, on many Summer-fallow fields, it is appearing above ground.

Cattle ſtill continue to keep their price. At the laſt Falkirk market, the number exhibited was conſiderably fewer than uſual. Heavy cattle was the only thing that met with dull ſale; but fine ſmall-boned cattle ſold readily, at about 15 per cent. higher than laſt year.

For the laſt four or five months, the town and county have been much obliged to the Edinburgh bakers, for ſelling the quartern loaf at about a penny below the aſſize. This aroſe from ſome new beginners, who wiſhed to attract buſineſs, by underſelling thoſe formerly eſtabliſhed in the trade. The latter, reſolving not to loſe their cuſtomers, determin-

ed to run their opponents down, by ſelling at a price below what either of them could well afford. But the policy of this meaſure may juſtly be called in queſtion; for, by dividing the loſs, the conteſt becomes prolonged; whereas, by leaving theſe upſtarts to purſue their own meaſures, they would ſoon have been under the neceſſity of following the footſteps of ſome predeceſſors, who, after a few months trial, found it neceſſary to decamp, leaving the innocent corn merchant to reap the fruit of their folly.——*Oct.* 22.

Lanarkſhire Quarterly Report.

The weather, during the paſt quarter, has been often wet; which has rendered the harveſt late. The bulk of the crop is now cut down, but a great part of it ſtill remains in the fields; which, it is hoped, will not long be the caſe, as the weather appears again to ſet in good. The crops have ſuffered conſiderably in ſeveral places, from ſevere froſts in the beginning of September, particularly upon the holms of Clyde above Lanark, and upon low, ſwampy, or mooriſh grounds. The ſtormy winds, on the 6th and 7th of the preſent month, have alſo done ſome damage, by ſhaking, in expoſed ſituations. In other reſpects, the harveſt, though late, has been favourable; and the wind keeping up, has prevented the rains from hurting the grain. Another week of good weather will do much to cut down what ſtill remains in late ſituations.

Our crops, in general, are bulky; but, from trials which have been made, it is believed they will not be productive in proportion. Wheat is a defective crop: there is enough of ſtraw, but many ears are empty, and, in others, the grain is lean. Oats are particularly bulky; and the grain is likely to be good, if it is well got into the barn-yard, except in thoſe places where it is damaged by the froſt. Barley is a good crop. Peas are very bad. Beans are of conſiderable bulk, on good land; but, being cut down before they became fully ripe, cannot turn out well. Potatoes appear to be a poor crop: Beſides being hurt by the froſt in many places, there is a great complaint that the quality is not good; they are alſo ſcabbed, and not likely to turn out productive. Hay has exceeded expectation, in point of bulk, though the harveſt was unfavourable, and part of it, conſequently, not well got. The current price, from the rick, was about 6d. per ſtone. Turnips are good on dry land, but indifferent on heavy land; they are allowed not to be of a large ſize, but equal on the ground. This, like all other wet ſeaſons, has proved unfavourable for fallows; conſequently, there is leſs wheat ſown than was intended, the land being in bad condition, and the ſeaſon for ſowing but indifferent. The graſſes ſown in Spring look promiſing, and appear, in general, to do well. The fruit orchards on Clyde, this ſeaſon, have failed almoſt wholly.

Our grain markets have been rather looking up for ſome time paſt. Good oat meal retails currently at 15d. per peck, and other kinds in proportion. Butcher meat runs from 8d. to 10d.; butter, from 14d. to 15d.; ſcum milk cheeſe, about 4½d.; and new milk cheeſe, about 8d.; all per lib. of 22 ounces.——16. *Oct.*

Upper

Upper Ward of Lanarkſhire Quarterly Report.

Our crops have ſuffered greatly by the intenſe froſt which commenced upon the 6th of September, and laſted three nights. Peas and beans have been rendered almoſt uſeleſs; and oats and barley, upon low lands, are very bad; indeed, ſo much ſo, that it is to be feared they will yield little meal, and, from the effects of the froſt, will be unfit for ſeed. After we had ſuffered ſo materially by the froſt, ſuch of our fields as were uncut, were greatly injured by a high wind, upon the 6th of October. Some farmers have loſt from two to three ſeeds; and thoſe who ſuffered moſt by the froſt, alſo ſuffered the greateſt loſs by the wind.

Oats and barley will be conſiderably below an average; ſcarcely half ſo productive as laſt ſeaſon. Potatoes were completely checked by the froſt, and are a very poor crop.

The greater part of the oats are cut down, and ſafely ſtacked. There is great abundance of ſtraw.

Black cattle and ſheep keep high in price. Fat cattle are ſelling at 10s. per ſtone, ſinking the offal; lean ſtock is higher in proportion, and a great demand. Good horſes bring great prices.——*Oct.* 18.

Berwickſhire Quarterly Report.

The ſhowery weather, at the concluſion of laſt, and beginning of this quarter, rendered hay-making a tedious operation, and greatly impaired the quality of that which was cut in the firſt of the rains. The crop was light; and, from the delayed period of cutting it, aftermaths have been very ſcanty. Selling prices, from the rick, were from 4½d. to 6d. per ſtone of 22½ lib. Engliſh.

Harveſt commenced about the 1ſt of September; and, excepting one hard gale of wind on the 10th, which ſhook a good deal of corn, we had fine ſeaſonable weather throughout the month; during which, moſt of the white crop in the low diſtrict was cut down. Reaping is now near a cloſe all over the county; but the hill-corns ſuffered conſiderably, from the high winds in the firſt week of October. A good part of the hill-crops, and moſt of the beans in the low part of the county, are ſtill in the field.

Winter wheats bulk well; but were ſo much injured by the red gum, or ruſt, which came on after the rains in July, that they do not yield in proportion to their appearance in the ſtack-yard. Spring ſown fields ſuffered leſs from the ruſt, but were late, and poor in the grain; ſo that, upon the whole, wheat can hardly be reckoned an average crop as to quantity, and the quality of ſamples will be various in the extreme. Barley ſtooked well; but the grain is ſmall and dingy coloured. Oats are a good crop. Peas were luxuriant, but very deficient in corn. If beans are well got in, they will probably turn out a middling crop, as they have made great improvement in filling ſince the froſty night of September 12th, which gave a check to their luxuriant growth. The potato crop, which, in ſome ſituations, was greatly injured by the froſt

above mentioned, is now taking up, and proves much inferior to that of laſt year.

Though the turnips of this ſeaſon make but a poor appearance upon cold wet lands, yet, as they are a cloſe full crop upon all the true turnip ſoils, their aggregate weight may be reckoned nearly equal to that of ordinary years. Young clovers have a promiſing aſpect; and paſturage has been good during the whole of this quarter. Fallows were, in general, well prepared; and, as the weather has hitherto been very favourable for putting in the wheat-ſeed, a conſiderable proportion is already ſown, and the early ſown fields have made a fine healthy braird.

The demand for lean ſtock, which was extremely briſk at the beginning of this quarter, flagged a good deal towards the end of September, in conſequence of the drought which at that time prevailed in England; and prices fell accordingly. At the recent markets, however, both ſheep and cattle have again met with a ready ſale; and, though prices are conſiderably lower than they were in Auguſt, they are ſtill ſeveral *per cents.* above the rates of laſt year. Good beef is ſelling at 8d.; mutton at 7d. and 7½d. per lib. of 17½ oz. avoirdupois. Potatoes are 7s. 6d. per boll of ſix firlots, barley meaſure.—*October* 20.

Dumfriesſhire Quarterly Report.

In the middle and lower parts of this county, the harveſt is nearly completed. In the higher grounds, the corns are cut down, and partly in the yards. Thoſe ſtill in the fields, are oats of the old or cold-ſeed kind; all early oats and barley having been got in long ſince, and in good order. Though this has been conſidered rather a wet harveſt, no corns, hitherto got in, have been injured.

The quality of grain ſeems ſtill a matter of doubt. It is certain, however, that the oats will be far inferior to thoſe produced in 1801 or 1800, in this county. The ſtack-yards are well filled—a circumſtance which always appears ſatisfactory to the great body of farmers; but it ſeems likely the fodder will prove defective in ſubſtance. Barley appears of an average quality. Wheat, generally bad, ſeems to have been hurt, partly, when in flower; and the late ſown by the froſt in the firſt week of September. Potatoes are defective, owing to the backward ſeaſon, and early froſt; and muſt be reported as much under an average crop.

Prices of barley, for ſhipping in November, are not yet fixed; but 3s. 4d. and 3s. 6d. per buſhel is generally ſpoke of by the buyers. Oat-meal is from 2s. to 2s. 2d. the ſtone; Potatoes 2s. the cwt. From the great deficiency of the crop of oats in the higher parts of the counties in the north of England, and ſouth of Scotland, it would ſeem there muſt be an increaſed demand for oat-meal, and that the price of it muſt riſe.

The deficiency of the crop of oats in the upland farms has ariſen, this year, in a great degree, from the farmers having leſſened their ſowing of early oats. This was owing to the effects of the two laſt warm early ſeaſons, which gave, at leaſt, more growth and ſtraw to the cold-ſeed oats;

oats; and made many forget, that late and colder ſeaſons might return. More peas than uſual were ſown, in the expectation, no doubt, of the ſame great crops given the former year: Theſe are the moſt deficient of all crops, and the worſt got in.

At the fairs in the north of England, in Auguſt and September, all ſtock appeared to fall in price; but, owing to the ſcarcity of cattle in the markets of the north, and there being no want of Winter's keeping in the ſouthern counties, the prices have again rather advanced.

Theſe high prices were, no doubt, firſt occaſioned by the extreme failure of ſheep, in the cold and wet ſeaſon of 1799, and the extra demand for our fleets and navy having encroached evidently a year's growth on the breed of cattle: But though the good ſeaſons, ſince 1799, have again made up the ſheep ſtocks in number and quality, nothing will do the ſame as to cattle, but a general increaſe in rearing. Even that may be prolonged in its effects, by the proſperity of our manufactures, which affords additional millions to indulge in the luxury of butcher meat of the niceſt kind, the conſequence of which ſeems incalculable.—*Oct.* 20.

ENGLAND.

Letter from a Farmer in one of the Northern Counties, Oct. 4.

'The annual meeting of the Society for Improving the Cheviot Breed of Sheep, held at Camptown, in Roxburghſhire, on the 10th ult., was honoured with the attendance of his Grace the Duke of Buccleugh, Sir John Sinclair, Baronet, and a great number of gentlemen and farmers from the conterminous counties. Beſides the uſual buſineſs of ſhewing, letting, and ſelling rams, ſome three-year old wedders were killed, weighed, and minutely examined. The weights of *one* of the Leiceſter, *one* of the South-Down, and *one* of the Foreſt breed, ſelected for an experiment, and kept two years on an improved and encloſed paſture, at Edgerſton, were, I am informed, as under:

Living weights, Sept. 1800.		*Living weights, Sept.* 1802.	
Leiceſter -	122½ lib.	Leiceſter -	186½ lib.
South-Down	107½	South-Down	163
Foreſt -	74¼	Foreſt -	145

Dead weights, September 1802.

Carcaſe.	*Offal.*	*Two years wool.*
Leiceſter, 124¾ lib.	Leiceſter, 62 lib.	Leiceſter, 11 lib. at 12½d. p. 11s. 5½d.
S. Down, 101½	S. Down, 62½	S. Down, 9 at 21½d. p. 16s. 1½d.
Foreſt, 78½	Foreſt, 66½	Foreſt, 9½ at 4d. p. 3s. 2d.

'From which it appears, that, in an equal ſpace of time, the Leiceſter and South-Down ſheep had increaſed their weight in the proportion of from 2 to 3 nearly, and that the Foreſt ſheep had almoſt doubled his. When the dead weights, however, are attended to, it will appear that the proportion of *mutton* is conſiderably in favour of the Leiceſter ſheep, and that the offal from the Foreſt breed, of the weight of 145 pounds,

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is 4½ lib. more than that from the former, though his weight was 186½ lib.; which corroborates the arguments advanced by the breeders of the Leiceſter kind.

'Having been informed that the exertions of this Society had improved the form, and increaſed the propenſity to fatten, of the Cheviot ſheep; and having, from the zeal and abilities of ſome its members, entertained not the leaſt doubt as to the correctneſs of my information, I was really much diſappointed that the qualities of that breed were not brought to the teſt on this occaſion. It cannot, for a moment, be ſuppoſed, that the Cheviot breeders would have thought themſelves diſgraced, by the Leiceſter and South-Down ſhewing a greater propenſity to fatten than *their ſheep*; and when it is conſidered, that the Society was formed for the expreſs purpoſe of improving the Cheviot breed, it ſeems likely that the advocates for the black-faced, hairy-wooled kind, will now report that the Cheviot ſheep are not yet fit to ſtand a competition with theirs. Several feeders will, doubtleſs, ſupport this conſtruction; and, conſequently, prefer the Foreſt breed in all places where Highland ſheep are moſt eligible.'

Yorkſhire Quarterly Report.

THE public may be congratulated on the cloſe of one of the fineſt harveſting ſeaſons ever known. The quality of the different grains appears excellent, and the quantity of produce by no means defective. The oats and other corns, even in the moſt backward and unfavourable ſituations, have been generally well harveſted, and are likely to prove more than uſually good and productive.

At moſt of the markets of this county, the beſt new wheat is now ſelling at about 9s.; Oats 2s. 6d.; Barley 4s. per buſhel of Wincheſter. Potatoes are abundant, and of the beſt quality, at 1s. 6d. per buſhel.

The ſummer-fallows have been completed with the greateſt eaſe; yet, from the long continuance of drought, little or nothing of the wheat-ſowing is done on theſe tilths, which are ſuppoſed to be leſs liable to weeds, when ſown *wet* than dry. The clover and other ſtubbles are too hard for ploughing at preſent. The young clovers and ſeeds, in general, plant much better than was expected; but the paſtures are very bare, and ſome of them much parched.

The turnips on the richer loams look well; on the weaker gravels and ſands, they are much on the wane, from the continuance of the drought: the after-graſs is of very trifling value. Theſe circumſtances have induced many to forebode a decline in the price of cattle; but they yet remain at a high rate. Sheep and pigs are rather lower than they have been. Hay was ſcarcely half of an average crop, and is now ſelling from 4 to 6l. per ton.

Fat cattle ſtill command good prices at Wakefield and Rotherham fortnight markets. Beef, mutton, veal, and pork, about 8d. per lib.; butter 1s. 3d. Good ſaddle horſes, of all kinds, are extremely dear; prime ones for draught ſell well; horſes of inferior quality are not ſo readily ſold.——*Oct.* 13.

Letter

Letter from a Gentleman in Eſſex, October 16.

'After leaving Scotland, which was upon the 4th of Auguſt, I was pleaſed to obſerve, on my return home, the forward ſtate of our crops, compared with that in the northern diſtricts; wheat harveſt being generally commenced in Eſſex, Suffolk, and Kent, whilſt the ſame kind of grain in Northumberland was only upon the blow, when I paſſed that way. We have enjoyed moſt favourable harveſt weather, not having been interrupted by a ſingle day's rain; ſo that the crops which are (with an exception or two) very abundant, have been houſed in excellent condition.

'*Wheats* are very well ſet, of good quality, and will, I believe, turn out to be fully an average. *Barleys* are particularly fine, both as to goodneſs and quantity: A ſeaſon is not to be remembered, when they have been more prolific. *Oats*, though not quite ſo productive, are not under an average. *Peas* have produced, in moſt parts of this neighbourhood, and of the county in general, little more than the ſeed. The froſts in May were a great impediment to their growth; ſo much ſo, that ſome farmers ploughed them up, and ſet the land with potatoes. Thoſe that ſurvived the froſt, were again ſeverely checked, juſt as they were on the blow, by what we call the *green-bug*. *Beans* are about two thirds of an average crop: they were very late: but, through the fineneſs of the ſeaſon, were well houſed. *Hops* were alſo materially injured by the Spring froſts. Till that time, they appeared in a moſt flouriſhing ſtate; but afterwards, every hop was blaſted, as the bines were moſt of them entirely deſtroyed, and had to ſhoot afreſh. The picking ſeaſon is now over; and laſt year, where 15 and 16 cwt. were grown upon an Engliſh acre, not more than 1 or 2 cwt. has this year been produced; and ſome of the grounds have yielded nothing. But what will convince you, more than any thing, of the correctneſs of this ſtatement, is, the duty, which laſt year was 242,000l., does not, this year, amount to more than 12,000l.

'Turnips have fallen off for the want of rain, which we have not had for thirteen weeks, excepting a day or two laſt week. Markets have lately had no material alteration. Laſts week at Chelmsford, which is our county town, prices were nearly as follows:

'Fine flour,	50s. to 54s.	per ſack,	(5 buſhels the ſack).
Wheat,	56s. to 65s.	per quarter,	8 buſhels Wincheſter.
Barley,	24s. to 26s.	do.	do.
Oats,	18s. to 24s.	do.	do.
White peas,	43s. to 47s.	do.	do.
Small beans,	33s. to 36s.	do.	do.
New ticks,	28s. to 32s.	do.	do.

'At Braintree fair, laſt week, which is the largeſt in Eſſex for hops, and a good one for ſtock, high prices were given for cattle. The Iriſh beaſts had, as uſual, the dulleſt ſale. Hops were ſold, at one time, as high as 15 guineas per cwt.; but they afterwards were reduced in price.

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The market was generally dull, and little or no buſineſs tranſacted. Old hops are, at this time, about 10l. or 10 guineas the cwt. When I went north, it was ſuppoſed harveſt would have been much later, owing to the wetneſs of the Spring; but the latter end of July being very fine and hot, the grain ripened beyond all expectation. We have not yet commenced ſowing. A few farmers embraced the ſhowers laſt week, and depoſited ſome Winter tares; but we have not had ſufficient rain to permit us to proceed in ſowing them, or other grain.'

Northumberland Quarterly Report.

THROUGH the whole of July, we had almoſt conſtant rains, which continued, with ſome intervals, till after the middle of Auguſt. Towards the latter end of that month, the rains ceaſed, juſt as our early oats were beginning to ripen; and from thence, to this time, we have been bleſſed with uninterrupted dry weather. The harveſt has therefore been probably ſuperior to any remembered, with the exception of a high wind on the 10th September, which ſhook the crops then uncut, and a ſevere froſt on the 12th, that alſo did conſiderable damage.

The wheat crops, notwithſtanding the promiſing appearance in the beginning of July, I am afraid will turn out very indifferent. They were much hurt by the drenching wets which prevailed during the blooming ſeaſon, and a long continuance of cold weather, which brought a mildew upon them. The froſt on the 12th, was ſo intenſe, as to check the growth of all thoſe crops that were not ripe at the time; ſo that the grains filled no more; and, from the combination of theſe circumſtances, I am ſorry to add, that I have not ſeen one good ſample of new wheat—a great part of the grains being ſhrivelled and ſmall; and the complaint ſeems to be pretty general.

The barley and oats are a fair average crop. Peas, upon very dry lands, are good; but, upon the ſtronger ſoils, there is abundance of ſtraw, with little or no grain. The beans have podded tolerably well, but, in ſome places, ſuffered very ſeverely by the froſt; ſeveral of the pods on the upper part of the ſtem being entirely ſpoiled.

Turnips, on fertile dry loams, are good; on ſoils of a moiſt, or ſtrong quality, they are bad. Thoſe that were ſown early on very dry lands, are beginning to mildew, (as they did in the year 1793); and, of courſe, their growth is entirely ſtopped: ſo, upon the whole, the turnip crop of this county may be eſtimated as conſiderably below par.

The prices for lean cattle and ſheep have kept remarkably high, until St Ninians fair, (27th September), where conſiderable numbers remained unſold. The drop in ſheep was about 16 *per cent.*; but at Wooler fair this day, the ſale was pretty good, and the prices higher than at St Ninians.

The markets for fat are alſo on the decline. Beef from 6s. to 7s. 4d. per ſtone of 14 lib. ſink; and mutton 7½d per lib. ſink.——*Oct.* 17.

Norfolk Quarterly Report.

OUR Wheat, Barley, and Oat harveſt, was finiſhed in a moſt capital ſtyle, about the 22d September; and ſince that time, the Bean crop

crop has been ſecured in equal good condition. The ſeveral grains are really ſo perfectly dry and hard, that already we could venture to ſhip them. The weather continued remarkably dry till about a week back, when we had ſome very ſalutary rains, which enabled the light-land farmers to plough; but ſtill, the rains were not enough for the heavy lands, they being ſo very hard; and, of courſe, little is done in ſuch ſituations. This delay of field-labour permitted, however, a more general thraſhing than uſual ſo early in the ſeaſon; and the markets have been well ſupplied with Wheat and Barley, and a pretty fair quantity of other grains, the quality of the whole fully anſwering our expectations. Below, are the current prices. We have rain this day, with every appearance of a continuance, which will enable the farmers to get generally to ſowing; which will leſſen the ſupply for a time.

Owing to the dry ſeaſon, the turnips were going faſt to ruin; but, within this laſt week, they are ſuprifingly reſtored, though, in ſome parts of this diſtrict, they will be found deficient, being very ſpungy. The graſs alſo ſuffered much for want of moiſture. In many high and dry ſituations, they were literally parched up; but upon the marſhes and low lands, there was good feed. A great demand has prevailed from Newcaſtle, for Hay, which has advanced the price to 3s. and 3s. 6d. per cwt. The crop of Potatoes is got up in good order, the quality very fine; and we believe there was a larger number of acres planted than cuſtomary.

On the whole, the crop of this county may be ſtated as equal to an average. Some of the wheats have been partially injured by mildew; but the greateſt part is of fine quality, weighing 60 lib. per buſhel and upwards. The growth of rye leſſens yearly; the import being ſo great, as to diſcourage it. Barley is an abundant crop, but Oats are not ſo good as laſt year. Peas, Beans and Tares, are equal to an average, and very bulky as to ſtraw. Rape yields badly, and the ſeed ſmall.

Norfolk Prices, October 18.

Wheat	60s. to 62s.	per Quarter.
Rye	36s. to 38s.	
Barley	24s. to 26s.	
Oats	16s. to 20s.	
White Peas	38s. to 40s.	
Grey do.	32s. to 34s.	
Beans	30s. to 32s.	
Tares	58s. to 60s.	

Rapeſeed, 35l. per laſt, 10 quarters.
Muſtard ſeed, 17 to 18s. per buſhel.
Butcher meat fully ſupports its former price.

Letter from a Farmer near Wakefield, Oct. 18.

'We have had the fineſt harveſt weather ever remembered, particularly ſince the middle of September. During the firſt part of the month, the

the weather, though dry, wanted ſun; of conſequence, ſome of the wheats come to market in a damp ſtate. But all is ſaved this year, as no loſs from either wind or rain was ſuſtained here; and, the ſeveral crops are generally good, particularly barley and wheat: The latter is conſiderably better than I expected in July, appearing then very thin upon the ground; but improved greatly afterwards, by the ſucceeding fine weather: It roſe ſuperior to our expectations, yields well below the flail, and is likely to prove above an average crop, and of very good quality. Barley, from all appearance on the ground, is a full crop; and the few ſamples that have appeared, are, in general, fine. The price of this grain is getting down, not only from the cry of a great crop, but, from malt being loaded with ſuch a heavy duty, which, operating upon the raw material, by leſſening the demand, will, in a great meaſure, fall upon the grower: Price from 28s. to 35s. the quarter of 8 buſhels. Oats, I believe, are the weakeſt crop in this diſtrict; but there are not many yet come to market: The quality appears good, and the crop nearly an average one. Beans, a very bulky crop, and much better podded than expected. As the weather continues fine, they are likely to be got in ſafely, which will materially add to their quality. Upon the whole, we may conſider ourſelves as highly favoured by Providence, being likely to have every kind of grain plentiful. Cattle markets are upon the decline; but are not down ſo much as grain. Mutton is ſtill worth 8d. per lib., and beef 6d.; but we expect them to be lower. There is a great number of pigs in the country; and, though prices continue high, feeding will be cheap: It is therefore probable, when theſe come to be ſlaughtered, that the conſumption of beef and mutton will decreaſe, and that prices will be reduced. We would be buſy putting in our wheats, but the weather is too dry for either ploughing or harrowing: Indeed, the drought is ſo great, that clover ſtubbles could not be ploughed before laſt Tueſday: On the preceding night we had a fine rain, which ſet us at liberty; but it has again ſet in very dry, and little wheat is yet ſown.'

Letter from a Gentleman near Stafford, Oct. 18.

'I have the ſatisfaction to ſtate, that the crops, in general, of this county, have produced great abundance, and are well got in, having had very little rain during the whole time of harveſt. As yet, the comparative value of the crop cannot be properly aſcertained, nor the quantity of grain it will produce per acre, as very little of the new corn is thraſhed out. On Saturday laſt, our markets were as follows—Wheat, from 8s. 9d. to 9s. 6d.; Barley, 4s.; New Oats, 3s.; Old, 3s. 6d.; 38 quarts per buſhel. The price of beans I cannot report, none having been brought to market.

'The price of beef and mutton ſtill keeps high; the former 7d., and the latter 7½d. per lib. The long continuance of dry and hot weather, ſince harveſt, has burnt up all our grazing land; therefore, I don't think the price will fall. The drought greatly retarded our ploughing; and very little wheat in this county is ſown. Turnips were at a ſtand during the

the dry weather; but as it has been more favourable for theſe few days paſt, I hope they will turn out to be an advantageous crop.

'The price of cheeſe, laſt week, was 55s. to 60s. per cwt. of ſix ſcore; Butter, from 14d. to 15d. per lib. I was laſt week in Derbyſhire: They were then in the midſt of harveſt; which was looked upon as early. The crops, in general, appeared good.'

Letter from London, October 18.

'We have had uncommonly favourable weather for the harveſt, in this part of the iſland, which commenced about the beginning of Auguſt, and was all got over by the ſecond week of September, in the higheſt order, except beans, which were alſo got in ſoon after, without a drop of rain to hurt them.

'I may ſay, in general, of the crops in the counties of Middleſex, Surrey, Kent, and Eſſex, that they are all abundant, except peas, which have, in ſome places, failed, and are, in general, not an average crop. Barley is an uncommon great crop, and, from the ſamples already preſented at Mark-lane, is of very fine quality. Turnips, in general, make but a poor appearance: even on the beſt lands in Hertfordſhire, they ſeem not to be an average crop, and appear all to be ſown broad-caſt; which is ſurpriſing, in a county where dibbling of wheat, and other grains, are carried to a great extent.

'Hops, this ſeaſon, have been univerſally bad; in many places not worth picking; in conſequence of which, the prices has advanced to twelve and fifteen pounds per cwt.

'Mark-lane has been well ſupplied, of late, with wheat, and prices declining; though, to-day, there has been a trifling advance. Barleys have alſo been on the decline; and a good ſupply of very fine peas at market, and on the advance. Beans are plentiful, and rather lower: What new beans have been yet at market, are of fine quality, and very dry and hard. Rye is plenty, but has had little ſale for ſeveral market days.

'For four days paſt, we have had favourable ſhowers, which make the clay lands in Middleſex work well; and the farmers are now buſy with their wheat ſeed.

State of London Markets, Monday, October 18. 1802.

Beſt Wheat -	66s. to 68s. per quarter.
Seed ditto - -	72s.—has been ſold as high as 84s.
Ditto Barley -	24s. to 26s.
Old Tick Beans -	26s. to 32s.
Ditto Small Beans -	35s. to 37s.
New Tick Beans -	24s.
Ditto Small Beans	32s.
Feed Oats, from -	18s. to 22s.
Good Polands -	25s. to 26s.
One Sample of Potato Oats	27s.
Hog Peas - -	42s. to 44s.
Boiling Peas -	50s. to 52s.—very few at market.
Seed Tares - -	12s. per buſhel.

Red

Red Clover	-	90s. to 130s. per cwt.
White ditto	-	90s. to 130s. ditto.
Trefoil	- -	44s. to 60s. ditto.
Rye-Grass	-	20s. to 32s. per quarter.
New Carraway Seed		86s. to 90s. ditto.
New Rape	- -	70s. to 74s. ditto.
New Hemp	-	86s. to 92s. ditto.

Smithfield Market is well ſupplied with Cattle and Sheep.

Prices of Beef	4s. 2d. to 5s. 4d.	*p.* ſtone of 8 lb.	Old Hay 5l. to 7l. 7s.
Mutton	5s. 4d. to 6s.		New ditto 4l. 10s. to 5l.
Veal	5s. to 6s. 6d.		Straw 1l. 16s. to 1l. 18s.
Pork	5s. to 6s.		

Average Price of Corn per Quarter for the week ending October 8.

	England and Wales.			*Scotland.*	
	s.	d.		s.	d.
Wheat	61	10	-	67	2
Barley	27	9	-	27	11
Oats	20	0	-	19	11
Beans	34	8	-	33	7
Peas	39	1	-	34	1
Oat Meal	18	0½	-	16	10

N. B.—The meal per boll of 140 lib. avoirdupois.

POSTSCRIPT TO SCOTISH INTELLIGENCE.

Letter from a Gentleman in the Diſtrict of Carrick, Ayrſhire, October 19.

'It will immediately occur to every perſon, that the Agricultural Reports of the Harveſt quarter ought to be given with the utmoſt poſſible accuracy and fidelity, as it is upon a thorough knowledge of the quantity and quality of the ſeveral crops, that the annual reſources and expenditure muſt be regulated. I therefore ſit down, with no ſmall degree of heſitation, to communicate my obſervations upon the ſtate of agriculture in this corner; and the more eſpecially, as the weather, through the whole ſeaſon, hath been ſo unuſual, and ſo very different, it would appear, from what it hath been in other parts of the kingdom.

Summer cannot be ſaid to have commenced here, till about the laſt week of July; and from thence, to the preſent time, it has continued ſufficiently warm, but with a more than ordinary quantity of rain; and we have, with little intermiſſion, been enveloped in clouds, as if placed under the ſhade of a tree. This warmth and moiſture coming on when the crops were in the vigour of ſhooting, occaſioned them to ſpring up to a great length, and has produced a great bulk of ſtraw; but it has cauſed the Harveſt in this diſtrict to become very irregular, as well as the

the quality of the grain to be unequal. In dry loamy ſoils, the grain was ripe, and the harveſt begun, by the middle of September; in ſoils of a different deſcription, and in high-lying ſituations, the harveſt is little more than a week begun, and the crop is little more than half ripe; and unleſs the weather continues uncommonly favourable, it will be the end of October, at leaſt, before the harveſt is finiſhed. If the quality of the grain were to bear any proportion to the bulk of ſtraw, which cannot be the caſe, we might look upon this as a ſeaſon of great plenty; but though no preciſe eſtimate can yet be formed of the quality, it is generally ſuppoſed that the crop, upon the whole, will be an average one.

'Our crops, in this part of the country, conſiſt chiefly of Oats, with an inconſiderable portion of Wheat, Bear, Barley, and Beans. A more improved ſtate of huſbandry is making rapid progreſs; and the gentlemen, much to their honour, are moſt aſſiduous in leading the way. Theſe, with ſeveral reſpectable and intelligent farmers, have begun the turnip huſbandry; and what turnips have been ſown, are looking well. The few weeks of good dry weather in Auguſt and September, put the ground in a good ſtate of preparation for the enſuing wheat crop. The greateſt fear is entertained for the potato crop, upon which the ſubſiſtence of the country now ſo much depends. So far as I can underſtand, there will be a great deficiency in this article, and that the crop will not exceed half of what it was laſt year, owing to the general cold and wetneſs, which are peculiarly unfavourable to the growth of that vegetable.

'From the great plenty and goodneſs of laſt ſeaſon, and the general appearance of the crops upon the ground during this, the markets have continued pretty ſteady. Oatmeal has been from 16s. to 20s. per boll; Wheat from 6s. 6d. to 8s. the Wincheſter buſhel. As for Bear and Barley, on account of the late heavy additional duty laid upon malt, and the diſtillers, from motives beſt known to themſelves, diſcontinuing their operations, there is little or no demand for it. The landed proprietors through Britain will find it their intereſt to procure ſome alteration in this tax, otherwiſe agriculture will get a ſevere check, and they themſelves will ultimately ſuffer.

'The price of ſheep and black cattle, during this quarter, hath rather riſen; and, of courſe, butcher meat continues extravagantly high. Mutton from 9s. 4d. to 12s., and Beef from 12s. to 14s. the ſtone of 24 pounds Engliſh. Hay and aftergraſs have not been deficient; and the crops having hitherto been got in, in good order, owing to the frequent winds, there will be no want of proviſion for the Winter ſtock.'

Letter from a Farmer near Kelſo, Oct. 21.

'The trials made of the different grains with us, have by no means given a flattering reſult. The wheat does not yield to its bulk; and, I may ſafely add, is very bad in quality. Barley is a very bulky crop: the grain is ſmall; conſequently, cannot be gifty. The oats, although our beſt crop in appearance, and producing a fair quantity per acre, will

not meal equal to laſt year's growth. Peas, we can ſay, are the greateſt bulk almoſt ever known; but as to grain, the quantity will be very trifling. Not many beans are grown in this county: the few we have are tolerable; that is, comparing them with the peas. Upon the whole, it is my opinion, that none of our grain equals an average crop. Potatoes are tolerably good; and, at preſent, experience rather a dull ſale. Turnips, of which this county produces a very large quantity, have improved conſiderably during the laſt two months.

'Cattle and ſheep have a quicker ſale, and brings higher prices than they did laſt month. This alteration may be accounted for, by the progreſs turnips have made; the great bulk of ſtraw, aided by a tolerable quantity of fine hay, and a great quantity of coarſe, which this ſeaſon allowed to be properly winned. From theſe circumſtances, abundance of food for cattle and ſheep is ſecured. Much attention is now ſhown to improving the breeds of cattle and ſheep, in this and the neighbouring counties; and the gentlemen are giving their countenance towards it. What bare fallows we have, are all ſown with wheat, and, it appears, are in a thriving and proſperous ſtate.'

POSTSCRIPT TO ENGLISH INTELLIGENCE.

Letter from Ripon, Yorkſhire, Oct. 21.

'We have had moſt excellent weather, to cut and get in our crops; indeed, during the period of my farming tranſactions, I do not remember of a better harveſt. Barley, oats, and beans are excellent crops. Wheat was rather thin on the ground, though the produce from the ſheaves, generally ſpeaking, is not ſo far amiſs.

'Hay was a poor crop in this diſtrict; and the after-graſs will not, in any reſpect, compenſate the original deficiency. Turnips, however, are pretty good; and are now ſelling from 5l. to 5l. 10s. per acre, to be eat on the field with ſheep. The young graſſes promiſe well.

'In our late markets, fat cattle appear to be declining in value; but lean ones of every deſcription, contrary to the expectation of moſt people, are wonderfully high. Sheep are rather lower than they were a few months ago, though ſtill very dear.

'I was lately in London; and, on my journey to and from the capital, obſerved the very great imperfection of the huſbandry practiſed in the intermediate counties. I conſider their ſtate of farming to be much behind ours in Yorkſhire; and, perhaps you will think, this does not ſay much in favour of the agriculture of theſe diſtricts.

'Price of wheat, 8s. to 10s. 6d. per buſhel. Fat cattle, 7s. to 8s. per ſtone of 14 lib.—ſinking the offal.'

ERRATUM.—In page 457, five lines from bottom, inſtead of '*a prudent farmer would cultivate turnips, which are not liable to this objection,*' read, '*a prudent farmer would cultivate turnips*, in a manner, againſt which this objection cannot be urged.'

No. XIII. will be publiſhed on Tueſday, 2d February 1803.

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TO CORRESPONDENTS.—The Conductors are extremely ſorry, that the communication relative to the *Improvements going forward this year in Caithneſs*, was received too late for inſertion in this Number, but will appear in the next.——W. N's *Anſwer to Queries on Vegetation*, will alſo find a place in next Number.——The letter of *A conſtant Reader*, and various other valuable communications, are unavoidably delayed, but will be attended to in due courſe.

DIRECTIONS for Placing the PLATES of Vol. III.

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